



SDMS DocID

466942

W. R. GRACE &amp; CO.

CRYOVAC

DIVISION

Superfund Records Center

SITE: Wells G. #

BREAK: 11.9

OTHER: 042 2x4 17

466942

TO D. A. Wamer/Duncan

DATE April 15, 1977

cc: V. A. Forte

FROM P. V. Shalline

SUBJECT Solvent Emission

The Woburn Plant's contribution of solvent based material to the atmosphere is so small that I don't believe you would want to consider us part of the study you are involved in.

Our main pollutant would be our spray painting operation. It is only used occasionally and actual spraying probably doesn't average 1 or 2 hours per day.

Our booth is a water curtain and spray type that probably collects some of the thinners used prior to exhaust. This is the limit of our solvent usage.

If you need further details, please call.

P. V. Shalline

EQUIPMENT DIVISION

TO: M. C. Morrill

DATE: August 4, 1967

CC: B. J. Cothran (2)  
G. H. McElhiney  
J. W. Watkins  
P. V. Shalline

FROM: V. A. Forte

SUBJECT: Pollution Control (Woburn  
Equipment Plant)

REFS: (a) M.C. Morrill subject memo 7/25/67.  
(b) R.L. Moore subject memo 7/14/67.

- (1) The Woburn Plant does not supply pollution control products or services.
- (2) Although not a chemical Plant, we conform both to requirements and requests from the Massachusetts Dept. of Public Health and the Sanitation Dept. of the Town of Woburn as regards disposable solutions and materials used in our hard goods manufacturing processes; and, also, in the matter of the Plant's exhausts through ventilation.

All chemicals are disposed of through the Town of Woburn sewerage system.

Ventilating exhausts from welding, polishing and plating are within safe limits as prescribed by the Massachusetts Dept. of Public Health (Survey conducted March 1966).

No trash burning is done at this location.

All boilers use natural gas.

Below is a breakdown of chemicals presently in use or projected for use at the Woburn Plant:

<u>Chemical</u>	<u>Concentration</u>	<u>Frequency of Disposal</u>	<u>Approx. Amt. Disposed</u>
Muriatic Acid	50%	Every two years (Neutralized before disposed of).	50 gal.
Sodium Cyanide	3 to 6 oz/Gal.	Every two years.	100 gal.
Zinc Cyanide	8 oz/Gal.	(Combined) Every two years.	100 gal.
Sodium Cyanide	6.4 oz/Gal.		
Sodium Hydroxide	10.4 oz/Gal.		
Nitric Acid	1%	(Combined) Monthly (Diluted before disposal)	5 gal.
Chromic Acid	1%		


<u>Cutting Oils</u>	<u>Concentration</u>	<u>Frequency of Disposal</u>	<u>Approx. Amt. Disposed</u>
DUBOIS "Lubricool"	40:1 (with water)	Random	2000 gals./yr.

Degreasing & Metal  
Cleaning Solutions

H.E. SANSON & SONS "Syn-Electro Cleaner"	100%	Random.	20 gals./yr.
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The following information was supplied by Mr. D. Heil, Chemist at Dubois Chemical Co. concerning their products used at our plant:

<u>Product</u>	<u>Concentration</u>	<u>PH</u>	<u>Frequency of Disposal</u>	<u>Approx. Amt. Disposed</u>
Perj	1%	12.8	} (Combined) 3 mos.	200 gal.
Differentiated Clarifiant	1%	12.0 to 12.5		
Darkote (Soka)	2 oz/Gal.	3.5	Monthly	400 gal.
Prepara	50%	1.0	Yearly	400 gal.
Alkon	1%	12.8	Yearly	100 gal.
Sprex AC	1 oz/Gal.	11.1	Monthly	400 gal.
Dufix	0.1%	2.1	Weekly	400 gal.
Supar Strip	1%	12.9	6 mos.	100 gal.

  
V. A. Forte  
Plant Manager  
Woburn

VAF/s8

2014

W. R. GRACE &amp; CO. CRYOVAC DIVISION

TO: J. W. Watkins

DATE: November 22, 1967

CC: J. S. Shaffer  
E. Orazine  
A. Graziano

FROM: P. V. Shalline

SUBJECT: Plant Maintenance &amp; Services.

Electrical

In our 7 years in Woburn we have been very fortunate in the matter of emergency conditions. The most serious condition has occurred when we had partial or complete power failures. Several times we have lost 1 of the electrical phases coming into the plant, which means the 3 phase motors are trying to run on 2 phase. In this condition I dump the main breaker on the distribution panel so we won't burn out the motors. By throwing individual circuit breakers we can turn on everything that runs on 1 phase, such as lights, tools, etc. At this time I call Boston Edison emergency service at 424-2090 to notify them of the trouble. I note the time and the person I talked with in case it is necessary to call back for any reason. When power is restored, everything can be put back on the line. It is necessary to start the air compressors, air cond. units and any unit with a magnetic starter as these will not start up automatically.

The electric meters are located at the main panel. Boston Edison reads these every month. I maintain a log of the readings and approve the monthly bills for accounting. Our average monthly bill is about \$1200 to \$1500 per month. Boston Edison's local phone is WELLS 3-5198. Edison's Industrial Engineer handling our account is Mr. Peffer and he can be reached at 424-2276.

Gas

Gas is supplied by the Mystic Valley Gas Co. at about 16" pressure. It enters the building in the center of the outside wall of the machine shop where the main gas meter is located. A secondary meter is located above the baking oven because any gas used here is charged at a different rate than gas used for space heating, steam generation or heating hot water.

Above the gas meter is an automatic safety valve (required by FIA) that trips closed whenever the main valve is shut off or if the gas pressure drops below the valve setting. When pressure is restored or the main valve turned on, the safety valve has to be reset manually. The main manual shut-off is a Fire Brigade Station and a wrench is chained in position for immediate use.

2015

Gas (cont'd.)

Gas is used for factory & office heating, hot water, baking oven and for the steam boiler to test tunnels and heat the Passivating & Phosphating Tanks. The gas meters are read monthly and I maintain a log of meter readings and approve the bills for the Accounting Dept. A winter gas bill is about \$1500.00 per month. In addition, the gas oven will cost about \$0.75 per hour to operate and the steam boiler about \$5.00 per hour.

The Mystic Valley phone number is DA2-5000 and Mr. Frank Hiney who handles our account can be reached there.

Water

The domestic water enters the building under the metal plate by the outside door near the cafeteria. The water meter and main shut-off valve are in this pit. Water bills average about \$50.00 per month. Water is heated in 2 gas-fired storage tanks in the boiler room and is circulated by a small pump to the laboratories and cafeteria.

The phone number of the Woburn Water Dept. is WELLS 3-0700.

Heating - Factory & Office

The office is heated by 2 systems, hot air and hot water. In the main system, water is heated in the gas fired Cleaver Brooks boiler and circulated by pumps through a set of coils in the air handling duct work. Air passing over the coils picks up heat and is distributed through the system. The water returns to the boiler, is reheated and recirculated. The office air is circulated 24 hrs. per day by the blower in the Buffalo Forge air handling unit. This is driven by a 10 HP motor. Dust collecting filters are in this unit and are changed every 2 months. The Cafeteria and Inspection areas have their own heating pumps.

The second and minor system is the baseboard radiation which surrounds the perimeter of the cafeteria and office spaces. These convectors are located on the outside walls and are used only in the winter to offset the cold radiation from the outside walls and windows. Hot water is pumped from the boiler through the convectors and back to the boiler by a separate pump.

The Machine Shop & Sheet Metal areas are heated using gas fired Van Dorn Infra-Red radiant heaters. These are controlled by 6 thermostats in various sections of the plant. In order for the heater to function, the pilot must be burning. The pilots must be lit in the fall and shut off in the spring. The only maintenance required on these units is the cleaning of the orifice and the cleaning of the grid with compressed air. There are over 40 heaters in the plant. At 7 PM every night a clock thermostat takes control to drop the

Heating - Factory & Office (cont'd)

factory temperature to 65°. At 5:30 AM the control goes back to the area thermostats. In the new addition there are 7 thermostatically controlled areas controlling 28 heaters. 14 of these are in Assembly and 14 are in the warehouse.

The heaters are Perfection Schwank Infra Red with electric spark ignition and therefore no standing pilot is necessary. When the thermostat calls, the pilot ignites and after a few moments the main burner comes on, unless the pilot fails to light. There is a night thermostat on the partition wall between Ass'y. and the warehouse that drops the temperature at night and returns the control to the area thermostat in the morning.

Both of our boilers are Cleaver Brooks and are serviced by the Frank I. Rounds Company in Newton. Their number is BI4-5998 and Mr. Philbrook is the service manager. The boilers are cleaned & checked yearly, usually during July or August.

Cooling - Factory & Office

The office is cooled by a 40 HP motor and refrigeration compressor located on the mezzanine. The air cooling coil is in the air handling system ductwork. A water and air cooled condenser is adjacent to the refrigeration compressor. The cafeteria has its own system and controls with the compressor located on the roof outside of the original boiler room and the control panel on the mezzanine. Inspection has its own cooling and fan unit just outside the office by the overhead door and the control panel is here also.

Any trouble with the refrigeration units should be referred to the Boston Air Legasse Co. at EXPORT 5 - 7900. Mr. Springer is the service manager.

In the winter all of the air conditioning compressors are pumped down to maintain the oil and gas in the compressor instead of the system. In the spring the units are opened up and checked for the summer cooling season. This work is done by the Boston Air Legasse Co. The work is done anytime before the hot weather sets in and after it has passed.

The factory is cooled with 13 large exhaust fans. These fans are reversible and can be used either to exhaust the inside air, or they may be reversed to blow the outside air in. 2 are in the warehouse and 11 are in the factory area.

The temperature control for the office, cafeteria and Inspection Dept. uses a Johnson pneumatic system. All controls are pneumatically operated with air supplied by a small compressor and receiver. This compressor is located on the mezzanine and delivers air at 15 pounds pressure. There are

Cooling - Factory & Office (Cont'd.)

3 control panels with Johnson controls mounted on them on the mezzanine and 1 outside inspection. These are used for controlling the heating and cooling, damper positions, 3 way water regulating valves, etc. The Johnson Service people are located in Cambridge. Tel. KIRKLAND 7 - 8930.

Compressed Air

The compressed air in the plant is supplied by a 25 HP compressor located in the warehouse and by 3 - 5 HP compressors located on the mezzanine. Except when unusual conditions exist, the 3 small compressors can carry the load. The air lines are valved to isolate either building or any compressor from each other if necessary.

Hartford Steam Boiler

This insurance company inspects and insures all of our pressure vessels including the refrigeration compressors, condensers, hot water heaters, air tanks and boilers. They inspect the vessels as often as the law requires and procure the Mass. inspection certificate required for this equipment which must be posted nearby.

Fire Extinguishers

We have 20 extinguishers in the plant. 9 of these are CO<sub>2</sub> and 11 are pressurized water.

Fire extinguishers must be recharged yearly, or in the case of carbon dioxide extinguishers, the contents must be weighed. Every 5 Years liquid type units have to be hydrostatically tested to 350 lbs. pressure. Fire & Safety Equipment Company, Cambridge, Mass. services our extinguishers. Telephone Number is UN4 - 3849.

Sprinklers & A.D.T.

There are 2 water lines feeding the sprinkler risers for the factory and the office. Outside on the lawn is a post indicator valve for the original factory area and in the hedges there is one for the office and new addition, These are the main shut-offs and are supervised by ADT. The riser for the factory is in the center of the Machine Shop on the outside wall and the one

Sprinklers & A.D.T. (cont'd.)

for the office and the new addition is behind the hinged panel to the left of the coffee machine in the cafeteria. The sprinkler system is checked monthly by ADT. Any time a head goes off and the water flows, ADT notifies the Woburn Fire Dept. On the wall separating the Machine Shop from the Cafeteria is a fire alarm box which goes direct to ADT in Boston. There are 2 test connections used to check the flow of water in the system. One is in the northeast corner of the Data Processing section and the other in the southeast corner near Shipping's overhead door. The sprinkler system cannot be touched without notifying the A.D.T., F.I.A. and the Woburn Fire Dept. Also, after the system is back in service, the above must be notified to that effect.

The other ADT function is the checking and maintaining of a low building temperature alarm system. These thermostats are set at 40° F and would only function in the winter if the boiler or unit heaters failed. There is a sensing element for the office and one for the factory. The thermostat in the factory covers the new addition as well.

The ADT phone number is Hubbard 2 - 2690.

The FIA phone number is Hubbard 2 - 9262.

The Woburn Fire Department phone number is WELLS 3 - 3131.

Rubbish Removal

Woburn Plant rubbish is picked up daily by the Frank Sarno Disposal Company of Burlington. The cost for this service is \$100.00 per month.

His telephone number is Browning 2 - 0509.

Snow Removal

This is handled by Earth, Inc. This is contracted on an hourly basis at \$14.00 per hour for plowing and at \$30.00 per storm for sanding. All of our plowing has to be done when the lot is clear of cars, such as nights, early morning or Sundays. Their phone number is 11- 664 - 3285 and the man in charge is Richard Hallberg.

Emergency Light Batteries & Exterior Floodlite Controls

There are 13 emergency battery locations as follows:

1. Outside center door to Office from Factory.
2. In cleaners' closet.
3. In Cafeteria over grille.
4. Over Machine Shop time clock.



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Emergency Light Batteries & Exterior Floodlight Controls (Cont'd.)

5. Over Sheet Metal Shop time clock.
6. In Inventory Cage on column.
7. Middle of outside aisle by Receiving.
8. In Assembly area on wall between Ass'y. and Warehouse.  
In Assembly area over time clock.
9. In Mach. Shop area near Inspection.
10. In Mach. Shop area by turret lathe.
11. In S. M. Area opposite Dip Tanks.
12. Opposite Inspection door.
13. Over Shipping office in new addition.

These are wet cell batteries provided with a trickle charger to maintain them in a charged condition. They come on whenever power is lost and should provide 4 or 5 hours of light. The water level should be checked monthly and the condition of the cells noted. The colored balls should be floating in the top of the sight glass.

The time switch for the flood lights illuminating the front of the building along Washington Street is located above the lighting panel in the Machine Shop.

The time switch for the flood lights illuminating the office parking area is located in the janitor's sink closet, cafeteria hallway.

The time switch for the Flood lights illuminating the rear of the building is located under the Ass'y. Dept. time clock.

The time switch for the flood lights illuminating the factory parking area is above the lighting panel opposite the Inspection Department.

Office Cleaning

Office cleaning is contracted to All Services Inc. of Medford, Mass. Telephone number EX5 - 7488. Mr. John J. McCann is our contact. His home phone number is HU8 - 0774.

Plant Protection

The Washington St. building is protected from intruders by the Hyde Park Alarm system. This is on a rental basis (\$56.00 per quarter) and is inspected twice yearly by them. The heart of the system is the control panel located behind the door in the TWX room. On this panel there is a voltmeter and a key to energize or deenergize the system. Except for the front door, all doors in the system are wired in series which will show a reading of about 6 volts on the meter when the circuit is complete; this means all of the doors are closed

Plant Protection (cont'd.)

and leads are attached where provided. With the exception of the front door, all of the outside personnel doors (7), the overhead doors (6), cafeteria doors (2), doors between office and factory (3) and doors into the DATA PROC. AREA (2) must be closed, leads attached to the overhead doors (2 on each side) before the meter will show a reading. It is also necessary for security to be sure that the side latches are engaged and the night latch in position on the overhead doors, and that a key is used to physically lock the outside personnel doors.

With all doors closed, locked and a reading on the meter, you can leave the building after doing the following: turn the key on the control panel to "On" energizing all of the above doors, go out the front door and lock it with your key, energize the front door by using your shunt key to turn the shunt from the horizontal to the vertical position. Note: the alarm bell will ring if the key switch on the control panel is turned on without a reading on the meter. The bell also rings in the Woburn Police Station as well as outside the building. On a regular working day, the person responsible for opening the plant needs 2 keys, a shunt lock key and a front door key. Entering the plant is accomplished by doing the following: before entering through the only door that may be used, the front door (because this has the shunt lock), turn the shunt lock so that the key is horizontal or in the day position, unlock the front door and enter. Before doing anything else, the key on the control cabinet must be turned to the "Off" position. After doing this, any door in the plant may be opened without the alarm sounding.

Anyone working in the plant outside of the regular working hours should employ the following procedure in order to be protected from intruders. The plant is to be entered thru the front door in the same manner as above utilizing the 2 keys required but after entering you would lock the exterior front door from the inside. The control panel should not be touched. To provide access between the office & plant or cafeteria, another shunt lock has been installed. This lock is located on the right door frame of the door that leads to the cafeteria hallway from the office area and should be turned to the day position (horizontal). Failure to do this would result in the alarm going off if any of the office to plant doors were opened for any reason. Having done the above means all exterior doors are in the circuit and the alarm would sound if anybody opened an exterior door. When leaving, be sure the cafeteria doors (2), office to plant doors (3) are closed securely before turning the cafeteria shunt key to the night or vertical position. Check the reading on the meter and if it reads about 6 volts go out through the front door, locking it and turning the shunt lock to the night or vertical position to put the front door back in the circuit.

Data Processing utilizes all of our utilities with the exception of the Hyde Park alarm system. Their personnel door to the outside does not have this protection. However, anyone going through the doors from Data Processing to Cryovac would set off the alarm since these doors are part of the alarm circuit.

Although not a chemical plant, we conform both to requirements and requests from the Massachusetts Dept. of Public Health and the Sanitation Dept. of the Town of Woburn as regards disposable solutions and materials used in our hard goods manufacturing processes; and, also in the matter of the Plant's exhausts through ventilation.

All chemicals are disposed of through the Town of Woburn sewerage system.

Ventilating exhausts from welding, polishing and plating are within safe limits as prescribed by the Massachusetts Dept. of Public Health (Survey conducted March 1966).

No trash burning is done at this location.

All boilers use natural gas.

Below is a breakdown of chemicals presently in use or projected for use at the Woburn Plant:

Zinc Plating

<u>Chemical</u>	<u>Concentration</u>	<u>Frequency of Disposal</u>	<u>Approx. Amt. Disposed</u>
Muriatic Acid	50%	Every two years (Neutralized before disposed of).	50 gal.
Sodium Cyanide	3 to 6 oz/Gal.	Every two years.	100 gal.
Zinc Cyanide	8 oz/Gal.		
Sodium Cyanide	6.4 oz/Gal.	(Combined) Every two years.	100 gal.
Sodium Hydroxide	10.4 oz/Gal.		
Alkon	1%	Yearly	100 gal.

Phosphating

The following are all DuBois Chemical Company products:

<u>Chemical</u>	<u>Concentration</u>	<u>Frequency of Disposal</u>	<u>PH</u>	<u>Approx. Amt. Disposed</u>
Sprex AC	4 oz per gal.	Monthly	11.1	900 gal.
Durkote (Soke)	4 oz per gal.	Monthly	3.5	900 gal.
Dufix	0.1%	Weekly	2.1	900 gal.
Du Dri	0.1%	Weekly		900 gal.

Passivating

Prepare	50%	Yearly	1.0	900 gal.
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2022

Painting

The following material is used in the painting department in the water wash paint spray booth:

<u>Product</u>	<u>Concentration</u>	<u>Frequency of Disposal</u>	<u>PH</u>	<u>Approx. Amt. Disposed</u>
Perj	1X	) combined	12.8	
Differentiated)		)	12-12.5	200 gal.
Klarifiant )	1X	) 3 months		
Super Strip	1X	6 months	12.9	100 gal.

Machine Shop

The following material is used in the Machine Shop as a machine cleaner and cutting oil solution:

<u>Product</u>	<u>Concentration</u>	<u>Frequency of Disposal</u>	<u>Approx. Amt. Disposed</u>
Lubricoolant 930	40:1 with water	Random	2000 gal/yr.
Syn Electro Cleaner	100%	Random	20 gal/yr.

All material is neutralized before it is disposed of in the Town drainage system.

P. V. Shalline

PVS/eg

TO P. V. Shalline/

DATE May 20, 1974

CC:

FROM R. J. Gunnard

SUBJECT Safety

Attached is a list of flammables used in our plant. Included is flashpoint, where used, and where and how stored. Please see that:

- a. Safety dispensers are supplied to Assembly for Alcohol.
- b. Safety dispensers supplied to Ozone for Acetate,
- c. If Carbon Tetrachloride is hazardous it is properly disposed of or otherwise properly stored.
- d. Trichlorethelene is disposed of as promised last year.
- e. Solvents in Lab are properly stored.

*ordered 5/22*  
*ordered 5/22*

I assigned this project to you ten months and twenty-six reminders ago. It took no longer than two and one-half hours to complete. Why couldn't you handle it?

  
R. J. Gunnard

RJG:bb

CONFIDENTIAL

EQUIPMENT DIVISION

3404

<u>DESCRIPTION</u>	<u>FLASH POINT IN °F</u>	<u>LOCATION USED</u>	<u>QUANTITY, HOW AND WHERE STORED</u>
Alcohol	40 - 90	Sheet Metal	5 Gallon cans, metal cabinet, tool crib
Alcohol	40 - 90	Sheet Metal	2 Quart safety dispensers
Alcohol	40 - 90	Assembly	1 Gallon can under bench in electrical sh (Must go into proper metal cabinet or use safety dispenser.) #1030/ 1 GAL CAP and 5/21
Acetone	4 - 36	Ozone	1 Pint plastic dispenser (Must change to safety dispenser.) #1023 AT BENLINE and 5/21
Acetone	4 - 36	Ozone	5 Gallons in metal cabinet - paint shop
Carbon Tetrachloride	Non-flammable	Inspection	1 Pint in can. <i>Only used by Al McEllan and very seldom - 24</i>
Gasoline	Room Temperature	Outside	5 Gallon safety can outside.
Solvent - Magnus 1219	104°	Machine Shop	55 Gallon drum grounded - Machine Shop
Solvent - Magnus 1219	104°	Machine Shop	30 Gallons (approx.) in parts washer covered and grounded.
Mineral Spirits	108°	Paint Shop	55 Gallon drum with dispenser grounded
Mineral Spirits	108°	Paint Shop	55 Gallon drum unopened
Trichlorethelene	<i>DISPOSED OF</i> Non-flammable 11-23	Paint Shop	55 Gallon drum with faucet grounded
Trichlorethelene	<i>DISPOSED OF</i> Non-flammable	Lab	1 Gallon can under work bench. (We PROMISE Duncan we would not use after 11/73 - please dispose.)

*Stop order 5/8/78  
R.K.S*

CONFIDENTIAL

3400

<u>DESCRIPTION</u>	<u>FLASH POINT IN °F</u>	<u>LOCATION USED</u>	<u>QUANTITY, HOW AND WHERE STORED</u>
Miscellaneous Paints and Solvents	-----	Paint Shop	1 Quart to 5 Gallon containers in metal cabinet
Lacquer Thinner	Below 73°	Paint Shop	5 Gallon containers in metal cabinet
No. 3919S Prep-Sol	Above 70° Below 100°	Paint Shop	5 Gallon containers in metal cabinet
No. 3919S Prep-Sol	Above 70° Below 100°	Lab	1 Gallon container under work bench (Must be in metal cabinet.)
Clear Seal-Horn	-----	General	55 Gallon drum in paint shop <i>BUY SAFETY CAN TOLUENE #10: PREP SOL ALCOHOL</i>
Waste Drum	-----	Paint Shop	55 Gallon drum grounded

3406

W. R. GRACE & CO.  
CRYOVAC DIVISION  
WOBURN, MASS.

TO: W. D. LEE JR.

DATE: APRIL 8, 1981

CC: SAM KNIGHT  
VIN FORTE ✓

FROM: PAUL V. SHALLINE

APR 13 '81 V.A.E.

SUBJECT: WASTE CONTRACTS

IN RESPONSE TO SAM KNIGHTS MEMO CONCERNING COPIES OF FORMAL CONTRACTS WITH HAZARDOUS WASTE TRANSPORTERS, DISPOSERS AND TRASH REMOVAL CONTRACTORS BEING SENT TO DUNCANS LEGAL DEPARTMENT, THE FOLLOWING IS WOBURNS SITUATION:

NON HAZARDOUS TRASH REMOVAL HAS BEEN HANDLED BY A SMALL FAMILY OWNED BUSINESS FOR THE LAST 21 YEARS ON A VERY INFORMAL BASIS. THERE WAS PROBABLY A PURCHASE ORDER COVERING THE COSTS OF THEIR DAILY PICK UP AT ONE TIME BUT THERE IS NONE NOW AND THEIR DAILY CHARGE OF \$15.00 IS PAID MONTHLY AS IF IT WERE ON A BLANKET ORDER. THEY HAVE THE NECESSARY PERMITS AND LICENSES TO DUMP OUR TRASH IN A LOCAL SANITARY LAND FILL.

HAZARDOUS WASTES, AS FAR AS WOBURN IS CONCERNED, CONSISTS OF LUBRICANTS, PAINT THINNER AND SLUDGE AND CUTTING OILS FROM THE MACHINE SHOP. WE HAVE HAD ONE SHIPMENT OF ELEVEN DRUMS THIS YEAR AND ARE PREPARING TO DISPOSE OF TWO MORE DRUMS OF WASTES THROUGH OUR TRANSPORTER AXTON CROSS COMPANY. WE DO NOT HAVE ANY FORMAL CONTRACT WITH THEM BUT IF ONE IS REQUIRED, WE WOULD HAVE TO DRAW IT UP AND SUBMIT IT TO THEM FOR THEIR REVIEW. OF THE 250 COMPANIES THEY DEAL WITH, THEY ONLY HAVE 5 OR 6 CONTRACTS. AXTON CROSS IS A LOCAL CHEMICAL COMPANY ESTABLISHED OVER 40 YEARS AGO. AS TOLD TO ME, THEY INSPECT THE DISPOSAL COMPANIES AND DISPOSAL SITES, CONFER WITH STATE AND GOVERNMENT OFFICIALS OVERSEEING THE DISPOSAL SITE, WHETHER A LAND FILL OR INCINERATOR, AND IN FACT, THEY HAVE BEEN SURVEYED 3 TIMES EACH BY THE EPA AND THE STATE DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING (DEQE) SINCE THEY BECAME INVOLVED IN WASTE DISPOSAL.

IF THESE PRESENT ARRANGEMENTS ARE NOT SATISFACTORY OR IF FORMAL CONTRACTS ARE NECESSARY, PLEASE FORWARD THEM TO ME. IF YOU WISH TO DEAL DIRECTLY, PLEASE ADVISE AND I WILL PROVIDE THE PROPER CONTACT IN THESE CASES.

*Paul V. Shalline*

PAUL V. SHALLINE

PVS/GSS



W. R. GRACE & CO.

CRYOVAC DIVISION

TO U LF NORDIN ✓

DATE

11-11-81

cc: ANDY M.  
STAN B.  
ELMA HOENIG

FROM

PAUL SHALLINE

SUBJECT

PARTS CLEANER

PLEASE REVIEW THE EQUIPMENT LOCATION AND CLEANING SOLVENT PURCHASED FOR USE IN THE NEW PARTS WASHER. IN ITS PRESENT LOCATION, SPARKS FROM THE BAND SAW, DISC SANDER AND OTHER SOURCES COULD REACH THE OPEN TANK AND IGNITE THE LOW FLASH POINT SOLVENT (140°F).

THE INSURANCE COMPANY WILL NOT ALLOW A TANK CONTAINING INFLAMMABLE MATERIAL TO HAVE A COVER HELD OPEN WITHOUT AN AUTOMATIC CLOSING FEATURE IN CASE OF FIRE, SUCH AS A FUSIBLE LINK.

I HAVE TAKEN THE LIBERTY OF TELLING STANLEY NOT TO FILL THE TANK UNTIL WE ARE SURE THAT THE INSTALLATION WILL MEET OUR FIRE AND SAFETY REQUIREMENTS.

  
PAUL V. SHALLINE

PVS/RC

~~Andy & Stan~~  
~~tests~~  
~~relocate the tank~~  
~~11/11/81~~

EQUIPMENT DIVISION

W. R. GRACE & CO.



*file*

S. Alba/R. Letson  
A. Marrone  
cc E. Orazine  
✓ U. Nordin

DATE April 26, 1983  
FROM V. A. Forte  
SUBJECT

The attorneys for the plaintiffs in the lawsuit against Cryovac will be touring the Woburn plant on Monday, May 2.

Please be sure everything is spic and span and looks organized. Put in extra time on this, even if you have to work on Saturday.

*V. A. Forte*  
V. A. Forte

VAF/mtl

# WOBBURN

INSPECTION DATE: 9-21-78 INSPECTORS: C. LOMBARDI (MOX)  
R. DUNN JR. (64V)

INDUSTRY NAME: W.R. GRACE CO. INC. CRYOVAC DIV.  
ADDRESS: 369 WASHINGTON ST.

INDIVIDUAL CONTACTED: MR. PAUL SCHALLINE  
(PLANT ENGINEER)

— ON INITIAL VISIT 9-21-78, THE PROPER PERSONAL WERE NOT ON THE PREMISES. WE REQUESTED THAT IF THEY WERE TO BE PRESENT LATER THAT AFTERNOON WE WOULD BE BY.

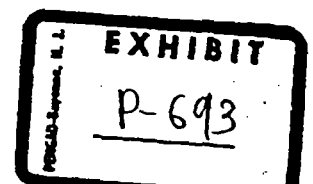
## GENERAL:

APPROX. 125 PEOPLE EMPLOYED AT THIS DIVISION. THEY WORK WITH STAINLESS STEEL FABRICATING, IN WHICH THEY MAKE PACKAGING MACHINERY MAINLY FOR FOOD INDUSTRIES ETC.

ALL PRODUCTS PARTS ARE MACHINED FROM THE RAW STOCK. THEN GRINDING FOR DEBURRING AND FINISHING

FOR THESE PROCESSES THERE ARE 3 MAIN AREAS

1. MACHINE SHOP
2. METAL SHOP
3. ASSEMBLY SHOP



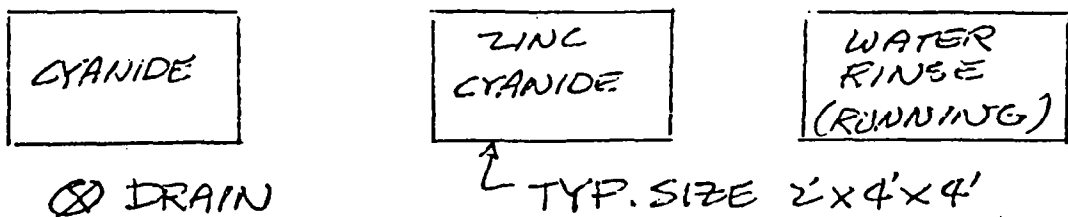
W. R. GRACE CO. INC.

## OPERATIONS:

1. PLATING: USED WITH ZINC SOLUTIONS; AND ZINC-CYANIDE SOLUTIONS; RUNNING RINSE PROCESS IN VATS (EVIDENCE OF DISCHARGE TO SEWER VIA FLOOR DRAIN.) VATS ARE 2'x4'x4'

NOTE: ELECTROLYS NICKLE IS BEING USED MORE NOW AND WILL PROBABLY BE USED MOSTLY IN FUTURE (AT PRESENT THEY SEND THIS PROCESS OUT TO BE DONE)

ZINC-CYANIDE PROCESS USED  $\approx$  2 HRS/WK.  
UNTILL ELIMINATED



— SKETCH OF PLATING AREA —

NOTE: DRAIN IS A GOOD SAMPLING PT. IF NECESSARY. ALSO WHEN PROCESS IS ELIMINATED, WHAT WILL BE THE METHOD USED BY WHICH THEY WILL DISPOSE OF THIS WASTE SOLUTION

W.R. GRACE CO. INC.

## 2. DISCONTINUED PHOSPHATING LINE:

- SKETCH -

ALKALINE	EMPTY	PHOSPHORIC ACID	H <sub>2</sub> O	PHOSPHORIC ACID
----------	-------	--------------------	------------------	--------------------

ALL TANKS ARE 4'x4'x8'; NO LONGER IN USE, METHOD OF DISPOSAL IS NECESSARY; THESE VATS ARE CLOSE TO FLOOR DRAINS.

3. HELIARC WELDING : USED CLOSE TO FLOOR DRAIN.

4. ARGON WELDING : SOME USE

5. SPOT WELDING : COOLING WATER USED FOR THIS GOES TO SEWER VIA FLOOR DRAIN (SMALL)

6. SPRAY PAINTING BOOTH : (LACQUER USED,

WATER CURTAIN, BOOTH IN USE 20 HRS/WK. WATER CURTAIN TANK IS 8'x15'x3'; WHEN WATER IS SPENT IT IS DISCHARGED TO THE SEWER AND THE SLUDGE IS DISPOSE

W.R. GRAVE CO. INC

- 6 CONT.: OF AS SOLID WASTE. MR. SCHALLINE CLAIMS TO BE HAVING A PROBLEM FINDING A SCAVANGER TO PICK UP THIS WASTE. THE BOOTH IS CLEANED OUT ONCE A MONTH.
7. DEGREASING: NONE
8. HEAT EXCHANGER: COOLING WATER SPENT TO S.D ROOF PIPE
9. WATER-STEAM WASH: ALL FINISHED PRODUCTS ARE STEAM-CLEANED & WATER WASHED; ENTERS SEWER VIA FLOOR DRAIN

### MATERIALS USED:

1. SOLVENTS: NONE
2. OILS: WATER SOLUBLE OILS USED IN CUTTING OPERATIONS WITH WATER COOLING
- a. VANISHING OIL
  - b. MAGNACOOLOIL

W.R. GRACE CO. INC.

3. PAINTS : LACQUER OIL BASE USED ; NO LATEX.  
KLARIFIANT PUT IN PAINT - 5-8%  
SOLUBLE IN H<sub>2</sub>O  
(REFER TO #6. UNDER OPERATIONS)

4. CLEANERS: DUJET - HEAVY DUTY GENERAL  
ALKALINE CONCENTRATE CLEANER.  
100% SOLUBLE IN H<sub>2</sub>O; STORED  
NEAR FLOOR DRAIN  
PERT - WATER WASH CLEANER,  
(SODIUM HYDROXIDE; NO PHOSPHATES)  
20% SOLUBLE IN WATER  
(REFER TO #9 UNDER OPERATIONS)

5. WATER : SOURCE FROM CITY; TOTAL  
CONSUMPTION  $\approx$  AVG 45,000 cu ft / month  
$$= 45000 \frac{\text{cu ft.}}{\text{month}} \times 7.48 \frac{\text{gal}}{\text{cu ft.}} \times 12 \frac{\text{MONTHS}}{\text{YR.}} \times \frac{1 \text{ YR}}{250 \text{ WORK DAYS}}$$
$$\approx 16,000 \text{ gpd}$$

6. METALS : ZINC, ZINC-CYANIDE  
(REFER TO #1. UNDER OPERATIONS)

7. ALKALINES : (REFER TO #2 UNDER OPERATIONS)

8. ACIDS : (REFER TO #2 UNDER OPERATIONS)

W.R. GRACE CO. INC.

## MISCELLANEOUS :

1. BOILER BLOW DOWN: ONCE A WEEK TO SEWER VIA DRAIN;  $\approx 100$  GAL EACH TIME
2. WASH SINK: CONNECTED TO ROOF DRAIN (SMALL USE)
3. ROOF DRAINS: ALL GO TO S.D. SYS.
4. AIRCONDITIONING: COOLING WATER IS RECIRCULATED
5. SEWER CONNECTION: ONE TO STREET

## WASTE ; TYPE ; DISCHARGED OR CONTAINERIZED :

1. WATER CURTAIN TANK SLUDGE: (REFER TO #6 UNDER) OPERATIONS

PRE-TREATMENT: NONE; NO GREASE TRAPS

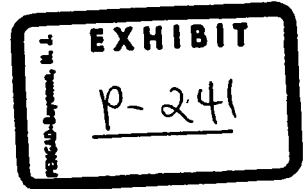
COMMENTS: . VERY COOPERATIVE



CRYOVAC DIVISION | W.R. GRACE & CO. | 369 WASHINGTON STREET  
WOBURN, MASSACHUSETTS 01808 617-933-7500

February 5, 1982

Director, Enforcement Division  
U. S. Environmental Protection Agency  
John F. Kennedy Federal Building  
Room 2103  
Boston, Massachusetts 02203



Attention: RCRA Compliance Clerk

Re: U.S. EPA Letter dated January 15, 1982 -  
Request for Information pursuant to  
Section 3007 of the Resource Conservation  
and Recovery Act, 42 U.S.C. Section 6927.

Dear Sir:

This is in response to the referenced letter requesting information concerning certain activities which occurred at our plant site, viz., 369 Washington Street, Woburn, Massachusetts, at the time when the latest addition to our plant was constructed in 1974. It is our understanding that you have also communicated with Donald M. Manzelli, Inc. who was involved in the construction at the time.

We appreciate EPA's grant of extension of time to answer as set forth in Attorney Rikleen's letter of January 25, 1982. We are providing this response in a spirit of cooperation, with the understanding that you are at present gathering information from many sources as to the potential causes of contamination of two wells in East Woburn and that our company has not been singled out as the target of any investigation at this time.

The Woburn plant of the Cryovac Division of W. R. Grace & Co. (Cryovac) is and, since its initial construction in 1960, has been engaged in metal fabrication of packaging equipment for the food industry. Most of the fabrication involves use of stainless steel to meet the rigid health and safety specifications of this industry. Exhibit A sets forth a basic description of the physical plant dimensions and construction history.

FEB 8 1982

In the course of its manufacturing activities Cryovac has utilized a limited amount of chlorinated solvents which are associated with a small parts painting operation at the site or with parts cleaning and the gluing/laminating of small parts as well as cutting fluids of the type customarily utilized in machine shops. These solvents and cutting fluids which are undoubtedly similar to those utilized by other manufacturing activities in the area and elsewhere have been used in small quantities over time as follows:

#### Trichloroethylene

One drum (55 gallons) purchased in 1973. Material used for hand cleaning of small metal parts. Total amount used up by 1975. Use discontinued after single initial order.

#### Toluene

Purchased in limited quantities, 5-gallon pails, and used as paint thinner to clean paint spray equipment. Use discontinued in 1975.

#### Acetone

One 5-gallon pail purchased in 1978. Used for wiping parts prior to gluing/laminating.

#### 1,1,1-Trichloroethane

This material is a constituent of cutting fluids used in the machine shop. Cutting fluids are used in metal cutting equipment for cooling and removing particles.

Of the above mentioned materials, only 1,1,1-trichloroethane is still in use and approximately 2 gallons of acetone remains of the 5-gallon pail purchased in 1978. The 1,1,1-trichloroethane is received in 55-gallon drums. The average inventory of such material on hand at any one time has historically been four or five drums. As received from the supplier, the material is a solution containing approximately 33% 1,1,1-trichloroethane. This solution is further reduced with water by a ratio of 40-50 to one for use in machine tools. Spent cutting fluid is accumulated in 55-gallon drums for disposal, as are paint sludge and related paint equipment cleaning material from the spray booth operations used to paint small equipment parts, all of which we generally categorize as "paint sludge."

The paint sludge is generated incident to the painting of certain parts of some of the equipment we manufacture. Painting is done in a spray booth with a water wash wall, an equipment design which captures fugitive paint spray to prevent its emission to either the plant atmosphere or outside the plant. The water wash is a closed loop system which recirculates water for long periods of time. The paint dries in the sump of the system which is periodically cleaned of the paint accumulation.

When the RCRA regulations came into effect, Cryovac registered as a generator of materials subject to the Act and is in full compliance with disposal requirements applicable to said materials. The waste is manifested as required and a certified transporter and disposer of waste has been engaged.

At no time have there been above ground or underground storage tanks on the site, nor is there any septic system at the site.

With respect to our relationship with Donald M. Manzelli, Inc., our information is that in the summer of 1974 Manzelli was hired in connection with the construction of an addition to our plant. Incident to the construction, a pit was dug and used to bury construction debris as part of a general cleanup. As part of the cleanup activity we estimate that between 10-15 filled or partially filled drums of accumulated paint sludge were emptied into the pit in the belief that the paint sludge was generally innocuous in nature. No drums were placed in the pit which was closed within a week after it had been opened. This incident was the only time in which a pit was opened on the property for waste disposal. The location of the closed pit is estimated to be approximately 100 feet behind (east of) the plant building, approximately 200-300 feet from the north and south boundaries of the property, and some 500 feet from the east boundary of the property. There are no wells on the property.

The water used at the plant is supplied by Woburn's municipal water system. We have had this water analyzed and copies of the analysis are attached as Exhibits B and C.

We hope this response is helpful to you and is based on our best recollection at this time.

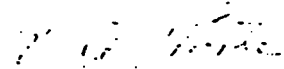
Cryovac is sensitive to the water problem which Woburn has been experiencing and to the health concerns which have been raised as well.

February 5, 1982

- 4 -

We are ready to cooperate with you in any reasonable way and hereby extend an invitation for EPA representatives to visit the plant at any mutually convenient time so that EPA may view our operations as well as the site where the pit was dug.

Very truly yours,



V. A. Forte  
General Manager  
Woburn Plant

Attachments

CC/ Lauren Stiller Rikleen, Esq.  
O. Mario Favorito, Esq.

ATTACHMENT "A" - SUBJECT PLANT

1. Woburn Plant  
Cryovac Division, W. R. Grace & Co.  
369 Washington Street  
Woburn, Massachusetts

Middlesex County

2.	Date of initial construction 1960-1961	<u>Sq. Ft.</u> <u>49,000</u>
	Expansion - 1966	22,000
	Expansion - 1969	12,000
	Expansion - 1974	<u>14,200</u>

12.6 acres ----- present square feet	<u>97,200</u>
--------------------------------------	---------------

3.	Administration	13,500
	Warehouse	12,000
	Manufacturing	<u>71,700</u>

97,200

4. SIC 3551

Metal fabrication plant engaged in the design and fabrication of (primarily) packaging machinery primarily for the food packaging industry.

RKS  
1/29/82

East Natick Industries  
6 Huron Drive - Natick, Mass 01760  
(617) 235-7330, 655-5950  
Telex 948459 GREENELAB NTIK

French Laboratories  
Springfield, Mass 01104  
(413) 734-6548

Woburn, Mass 01801  
(617) 832-5501

TEST REPORT

TO: OFFICE DATE 11/3/81 MATERIAL Water  
Div. of W.E. Grace & Co. JOB NO. 16099-1 HEAT NO. \_\_\_\_\_  
369 Washington Street LAB. NO. \_\_\_\_\_ SPECIFICATION/RE \_\_\_\_\_  
ATT: Woburn, MA 01801 ORDER NO. \_\_\_\_\_

Problem: To analyze a water sample for Volatile Organic Contaminants  
in a well water sample.

Sample: Domestic drinking water 10/21/81.

Method: The sample was analyzed for Volatile Organic Contaminants  
Gas Chromatographic/ Mass Spectrometric Technique. The instrument  
was equipped with a purge and trap concentrator for this purpose.

Results: There were no volatile organic contaminants found at levels  
greater than our detection limit of 5 ppb. The list  
of volatile organic contaminants scanned for in the analysis  
is included with the report.

SUBSCRIBED TO AND SWORN TO BEFORE ME THIS  
DAY OF \_\_\_\_\_ 19\_\_

NOTARY PUBLIC

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND THIS

3rd DAY OF November  
ARNOLD GREENE TESTING LABORATORIES, INC.

James J. Derill

UNLESS STIPULATED IN WRITING BY YOU, ALL SAMPLES WILL BE RETAINED FOR 30 DAYS AND THEN DISPOSED OF.

THIS REPORT IS RENDERED UPON THE CONDITION THAT IT IS NOT TO BE REPRODUCED WHOLLY OR IN PART FOR ADVERTISING AND PROMOTIONAL PURPOSES OVER OUR SIGNATURE OR IN CONNECTION WITH OUR NAME WITHOUT OUR SPECIAL PERMISSION IN WRITING.

NONDESTRUCTIVE TESTING: MAGNAFLUX • ZYGLO • MILLION VOLT & LOW VOLTAGE X-RAY • ULTRASONIC FLAW DETECTION •  
THICKNESS MEASUREMENT • BORESCOPE • GAMMA-RAY • FILM INTERPRETATION & CONSULTATION  
DESTRUCTIVE TESTING: FATIGUE TESTING • METALLURGICAL INVESTIGATIONS • WET CHEMICAL ANALYSIS • SALT STRESS •  
SPECTROGRAPHIC ANALYSIS • PROCEDURE & WELDER QUALIFICATION • IMPACT • STRESS RELIEF •  
SUPERFICIAL • BRINELL • MICROHARDNESS • MICROPHOTOGRAPHY

TEST REPORT

TO: Cryovac DATE 11/2/81 MATERIAL \_\_\_\_\_  
Div of W.R. Grace & Co JOB NO. 16099-1 HEAT NO. \_\_\_\_\_  
369 Washington Street LAB. NO. \_\_\_\_\_ SPECIFICATIONS \_\_\_\_\_  
Woburn, MA 01801 ORDER NO. Verbal

Sample: Drinking Water W.R. Grace October 23, 1981

Odor	3 OII	Nitrate (N)	0.15 mg/l
Color	14 PCCU	Nitrite (N)	0.03 mg/l
Turbidity	8.6 NTU	Total Dissolved Solids	57 mg/l
Chloride	23.2mg/l	Total Coliform Bacteria	0/100 ml MPN
pH	6.9	Iron	0.86 mg/l
Total Alkalinty (CaCO <sub>3</sub> )	20.0mg/l	Manganese	0.06 mg/l
Total Hardenss (CaCO <sub>3</sub> )	24.9mg/l	Sodium	12 mg/l
Ammonia (N)	0.18 mg/l		

Comment: The water analyzed does not meet the specification for  
Odor, color, and Turbidity.

SUBSCRIBED TO AND SWORN TO BEFORE ME THIS  
DAY OF \_\_\_\_\_ 19\_\_

NOTARY PUBLIC

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND THIS  
3rd DAY OF November 81  
ARNOLD GREENE TESTING LABORATORIES, INC.

Michael Davis

UNLESS STIPULATED IN WRITING BY YOU ALL SAMPLES WILL BE RETAINED FOR 30 DAYS AND THEN DISPOSED OF

THIS REPORT IS RENDERED UPON THE CONDITION THAT IT IS NOT TO BE REPRODUCED WHOLLY OR IN PART FOR ADVERTISING AND/OR OTHER  
PURPOSES OVER OUR SIGNATURE OR IN CONNECTION WITH OUR NAME WITHOUT OUR SPECIAL PERMISSION IN WRITING

NONDESTRUCTIVE TESTING: MAGNAFLUX • ZYGLO • MILLION VOLT & LOW VOLTAGE X-RAY • ULTRASONIC FLAW DETECTION • AUDIO  
THICKNESS MEASUREMENT • BORESCOPE • GAMMA-RAY • FILM INTERPRETATION & CONSULTATION  
DESTRUCTIVE TESTING: FATIGUE TESTING • METALLURGICAL INVESTIGATIONS • WET CHEMICAL ANALYSIS • SALT SPRAY • ACID ET  
SPECTROGRAPHIC ANALYSIS • PROCEDURE & WELDER QUALIFICATION • IMPACT • STRESS RUPTURE • ROCKWELL  
SUPERFICIAL • BRINELL • MICROHARDNESS • MICROPHOTOGRAPHY

PRIORITY POLLUTANTS  
VOLATILE ORGANIC CONTAMINANTS

Compound:

methylene chloride  
trichlorofluoromethane  
1,1-dichloroethylene  
1,1-dichloroethane  
trans-1,2-dichloroethylene  
chloroform  
1,2-dichloroethane  
1,1,1-trichloroethane  
carbon tetrachloride  
bromodichloromethane  
bis-chloromethyl ether  
1,2-dichloropropane  
dichlorodifluoromethane

Compound:

trans-1,3-dichloropropene  
trichloroethylene  
dibromochloromethane  
cis-1,3-dichloropropane  
1,1,2-trichloroethane  
benzene  
2-chloroethylvinyl ether  
bromoform  
1,1,2,2-tetrachloroethane  
1,1,2,2-tetrachloroethane  
toluene  
chlorobenzene  
ethylbenzene



( *Woburn* )  
 WATER CONDITIONING CO.  
 39 Chelmsford Street, Lowell, MA. 01851  
 Tel. (617) 454-8606 Boston Area 259-8500

To Mr. Ulf Nordin  
 C/O Cryovac  
 369 Washington Street  
 Woburn, Mass. 01808

PO# 8239E

Date November 20, 1981

Analysis No. #3875

Consumer Residential

Source Municipal

Sampling point

Sample represents Untreated Water

Sample taken

11/13/81

Sample rec'd

11/16/81

Turbidity		NTU	Calcium (Ca)		mg/l
Color	None as received		Magnesium (Mg)		mg/l
Odor	None as received		Sodium (Na)		mg/l
Total Hardness*	1.0	gpg	Chloride (Cl)		mg/l
pH	7.3		Sulfate (SO <sub>4</sub> )		mg/l
Iron (Fe)	0.1	mg/l	Nitrate (NO <sub>3</sub> )		mg/l
			Hydroxide Alk.*		mg/l
			Carbonate Alk.*		mg/l
			Bicarb. Alk.*		mg/l
TDS	75	mg/l	Conductivity		umhos/cm

\* Expressed as Calcium Carbonate (CaCO<sub>3</sub>)

Remarks:

This water contains only a slight amount of mineral contamination. Activated carbon filtration will do an excellent job to improve taste and eliminate odors.

*Thomas Conity*  
 Chemist

UNITED STATES DISTRICT COURT  
For The  
DISTRICT OF MASSACHUSETTS

. . . . .  
ANNE ANDERSON, et al.,  
                    Plaintiffs,  
                    v.  
CRYOVAC, INC., et al.,  
                    Defendants.  
. . . . .

CIVIL ACTION  
NO. 82-1672-S

SUPPLEMENTED ANSWERS OF W. R. GRACE & CO.  
TO PLAINTIFFS' INTERROGATORIES (FIRST SET)

Defendant W. R. Grace & Co. ("Grace") files these  
Supplemented Answers to Plaintiffs' First Set of Interrogatories  
in accordance with the requirements of Fed. R. Civ. P. 26(e) and  
in response to Plaintiffs' Request for Supplementation. Grace  
incorporates herein its Objections of W. R. Grace & Co. to  
Plaintiffs' Interrogatories, dated November 8, 1982. Interroga-  
tories requesting information about chemicals, are answered only  
with respect to the chemicals enumerated in the Amended Com-  
plaint, other than benzene, namely, trichloroethylene,  
tetrachloroethylene, 1,1,1-trichloroethane, 1,2-  
transdichloroethylene, and chloroform, and only as to the period  
from 1960 through 1979. Grace objects to such interrogatories  
insofar as they seek information about benzene on the ground that  
plaintiffs have made no claim against Grace with respect to  
benzene. Further, Grace objects to such interrogatories insofar

as they seek information about other chemicals not named in the Amended Complaint (hereinafter "other chemicals"). Grace also objects to such interrogatories insofar as they seek information about matters subsequent to 1979, when wells G and H were taken out of production, on the grounds that such information is irrelevant and is not reasonably calculated to lead to the discovery of admissible evidence.

All interrogatories are answered to the best of Grace's current knowledge.

1. In what year did the Cryovac Division of W. R. Grace & Co. (hereafter Cryovac) commence operations in Woburn, Massachusetts?

ANSWER: 1960.

2. Who is the present owner of the property on which the Cryovac plant is located on Washington Street in Woburn (hereafter, the Washington Street property)? Identify and give the addresses and dates of transactions of:

- a. The holder(s) of the deed to the above property;
- b. the holder(s) of any mortgages on the above property;
- c. the holder(s) of any leases (identify lessor and lessee on the above property;
- d. the possessor(s) of any easements or right of easement on the above property; and
- e. the holder(s) of any other contract or formal agreement related to the ownership and/or use and enjoyment of the above property.

ANSWER: Interrogatory No. 2 is understood to seek information as of the present time. W. R. Grace & Co. is the present owner.

- a. W. R. Grace & Co. (1960)  
Grace Plaza  
1114 Avenue of the Americas  
New York, New York 10036
- b. Without waiving objections, none.
- c. Laser Data Corporation - Lessee. (1982)  
369 Washington Street  
Woburn, Massachusetts
- d. None.
- e. Without waiving objections, none.

3. Does Cryovac now, or did it previously operate another (or other) facility(ies) at other locations in Massachusetts? If so, give addresses and dates of operation of all other Massachusetts facilities.

ANSWER: See objections.

4. Identify the owner of the Washington Street property immediately prior to ownership by W. R. Grace & Co. and/or Cryovac.

ANSWER: Calidyne Company, Inc.

5. Describe activities on and/or use of the Washington Street property immediately prior to ownership and/or occupancy of that property by W. R. Grace & Co. and/or Cryovac.

ANSWER: Grace believes that, prior to purchase by the Calidyne Company, Inc., the property was used for farming and nursery purposes. Calidyne Company, Inc. constructed a building foundation but never completed or occupied the building.

6. Identify and describe all physical structures and improvements to the Washington Street property that existed at the time of purchase or occupancy of that property by W. R. Grace & Co. and/or Cryovac.

ANSWER: At the time of purchase, a building foundation described in answer 5, a pump house, and buried foundations of demolished farm buildings.

7. Describe and date all construction activities on the Washington Street property subsequent to the purchase or occupancy of that property by W. R. Grace & Co. and/or Cryovac. Provide the names of any contractors and/or construction companies involved in each construction project.

ANSWER: The original building was completed in 1960. The contractor was Richard J. Donovan, Inc. The building was expanded in 1966 and in 1974. The contractor in 1966 was Richard J. Donovan, Inc. The contractor in 1974 was Manzelli, Inc. Construction of a warehouse was begun late in 1969 and completed in 1970. The contractor was Richard J. Donovan, Inc.

8. Describe and date all other improvements to the Washington Street property subsequent to the purchase or occupancy of that property by W. R. Grace & Co. and/or Cryovac. Provide names of contractors and/or construction companies involved in each project.

ANSWER: See objections.

9. Describe all products manufactured at the Washington Street property since W. R. Grace & Co. and/or Cryovac assumed ownership.

ANSWER: Metal packaging equipment for the food industry. As to specific products, see objections.

10. Describe the volume of production that took place at the Washington Street property during each of the years W. R. Grace & Co. and/or Cryovac owned the property until present.

ANSWER: Produced equipment sales for the plant are estimated to have been as follows:

1979 - \$7,498,000  
1978 - \$9,088,000  
1977 - \$9,369,000  
1976 - \$6,199,000  
1975 - \$8,930,000  
1974 - \$4,791,000  
1973 - \$3,223,000  
1972 - \$2,647,000  
1971 - \$2,141,000  
1970 - \$3,408,000  
1969 - \$3,555,000  
1968 - \$2,228,000  
1967 - \$1,824,000  
1966 - \$3,782,000  
1965 - \$3,235,000  
1964 - \$3,137,000  
1963 - \$2,933,000  
1962 - \$2,381,000  
1961 - \$1,943,000

As to periods after 1979, see objections.

11. Describe each and every chemical or product containing chemicals that were or are used in W. R. Grace & Co.'s and/or Cryovac's operations at the Washington Street property at any time since the operations commenced. Give product names and generic terms for the chemicals.

ANSWER: Cool Tool - 33% 1,1,1-trichloroethane.

Syn-Electro Cleaner - 12% 1,1,1-trichloroethane.  
(By weight)

Trichloroethylene.

Magnus Solvent #9 - 10% tetrachloroethylene.

Magnus Solvent #1219 - 5% tetrachloroethylene.

Tapfree - 85% 1,1,1-trichloroethane

Alumtap - 5-10% tetrachloroethylene

Loctite Primer T - 86-90% 1,1,1-trichloroethane

As to other chemicals and benzene, and periods after 1979, see objections.

12. For each chemical or product containing chemicals listed under question 11, state:

- a. the quantity purchased for each year that Cryovac occupied the property at Washington Street until present;
- b. identify all locations where each chemical or product was or is stored on site, and describe the storage and/or processing containers;
- c. state what is, or has been the maximum amount of this chemical or product stored on site at any one time;
- d. state how frequently deliveries of this chemical or product are received; and
- e. state whether there have been any spills or disposal of this chemical on the premises of the Washington Street property. If so, provide all records and/or a description of each incident. Give dates, the names and amounts of each chemical involved, and the exact locations.

ANSWER: The figures below represent the specific purchases that Grace has been able to identify, through existing documents.

a. Cool Tool

1972 - 5 gallons (approx. 2 gallons 1,1,1-trichloroethane)

1974 - 7 gallons (2 1/3 gallons 1,1,1-trichloroethane)

1975 - 5 gallons (approx. 1 gallon 1,1,1-trichloroethane)

1979 - 55 gallons (approx. 18 gallons 1,1,1-trichloroethane) (purchased after the closing of Wells G and H on May 22, 1979).

Syn-Electro Cleaner

1963-1967 1485 gallons

trichloroethylene

1964 - 55 gallons

1966 - 55 gallons

1972 - 55 gallons

1973 - 55 gallons

Magnus Solvent #9

1974 - 110 gallons (11 gallons  
tetrachloroethylene)

1975 - 220 gallons (22 gallons  
tetrachloroethylene)

Magnus Solvent #1219

1974 - 605 gallons (approximately 30 gallons  
tetrachloroethylene)

Tapfree

1974 - 1 gallon

1975 - 1 gallon

1976 - 1 gallon

Alumtap

1972 - 8 gallons

1975 - 1 gallon

1976 - 1 gallon

Loctite Primer T

1976 - 24 6 oz. bottles

- b. Trichloroethylene was held in a 55-gallon drum as received in the paint shop, for use as needed. All of the other materials were held in the machine shop area in drums or one gallon containers as received, for use as needed, except for the Loctite Primer T, which may have been used in the assembly area.
- c. The largest amount of any one of these chemicals held on site at any one time was generally one or two 55- gallon drums.
- d. See answer 12(a).
- e. Yes.
- 1. Approximately fifteen gallons of material from the degreaser in the machine shop was disposed of on occasion by spreading it on the ground in the area between the two drainage ditches in the rear of the plant on a sunny day for drying and evaporation. All of the substances contained in this material are not known, but substances used



in the degreaser from time to time included small amounts of 1,1,1-trichloroethane or tetrachloroethylene. It is believed that no trichloroethylene was used in the degreaser.

2. In 1974 a pit was dug in the area behind the building. It is estimated that approximately 6 to 10 filled or partially filled drums of accumulated paint sludge were emptied or placed into the pit. The pit was covered with dirt shortly after it was opened. Constituents of the paint sludge are not known, but substances used in processes yielding paint sludge as a waste byproduct from time to time might have included small amounts of trichloroethylene, and one or more of the drums placed in the pit was found to contain some trichloroethylene.
3. It is believed that employees might occasionally have discarded small amounts (a quart or less) of materials at the rear of the plant after obtaining a small quantity from the paint shop for wiping down machines or parts by hand. It is not known what substances were so discarded.
4. It is believed that employees might occasionally have poured materials possibly containing chemicals named in the Amended Complaint down one or more of the drains in the plant.

As to other chemicals and benzene, and periods after 1979, see objections.

13. List all raw materials other than those listed under question 11 used or stored at the Washington Street property during the period Cryovac owned or occupied the property until present.

ANSWER: The term "raw materials" is understood to refer to materials incorporated into finished products. Metal stock and parts, solid plastic, cardboard and wood. As to periods after 1979, see objections.

14. Describe the process of manufacturing operations at Cryovac during each of the years that Cryovac owned or occupied the Washington Street property until the present.

ANSWER: Grace understands the phrase "during each of the years" to mean at any time during the year and not for the duration of the entire year.

**Machine Shop:**

This area was a typical small machine shop with standard metal working machinery such as lathes, milling machines, drill presses and grinders. Material processed included ferrous and non-ferrous metals and plastics.

**Sheet Metal:**

This department was a well equipped sheet metal fabricating shop. Equipment included shears and saws for cutting the metal sheets, tubing and pipe, punch presses for punching various size openings in the sheets, drill presses for drilling holes and power brakes for bending the metal. Included in this area were the grinding and polishing area and welding shop. In the grinding area, the metal was deburred of all sharp edges before being welded into an assembled unit and given a final polish to remove any scratches and provide a uniform finish to the assembly. The welding area took individual parts and welded them into a final fabrication ready for the assembly department after refinishing and cleaning.

**Cleaning and Passivating:**

In this area, welded fabrications and other parts were cleaned of shop soil or heat discoloration resulting from the welding process. An alkaline cleaner was used in conjunction with a steam cleaner to clean these parts of shop soil. Welded parts were cleaned of the heat discoloration by painting the weld with paste, wire brushing the dried paste to remove it, followed by steam cleaning and a clean water rinse. Parts were then delivered to our assembly department.

**Paint Shop:**

About twenty years ago, many of the machine components were made of steel and required that they be painted. During this time, a cleaning and phosphating line was set up to clean and coat these parts prior to painting. This was dismantled and sold after many years of inactivity. Following this treatment, the parts were ready

to paint. Painting was done in the spray booth, 6' wide x 7' high x 7-1/2' long. It housed an exhaust and recirculating water system to collect the overspray when painting. For much of the period in question paint used was almost exclusively a food approved product. During these early years, a paint baking oven was utilized to dry certain types of paint. The limited amount of painting done more recently did not warrant using this oven any longer. Most of the painting done in recent years was to touch up painted commercial purchased parts and a very few manufactured parts. This has always been a one man operation in conjunction with the zinc plating operations.

#### Zinc Plating:

This was a process consisting of five tanks.

#### Assembly Department:

This was the final step in our manufacturing process and involved the assembly and testing of our packaging machinery before placing into inventory.

#### Logic Gluing:

As part of the assembly function, we have done gluing of plexiglass blocks used in the air logic system on one model of our packaging machine line. The largest size piece was about 12" x 18". The pieces were cemented together into assemblies. The process was conducted in the paint spray booth.

Only one person conducted this operation.

#### Ozone Project:

This project involved the fabrication, assembly and testing of all modules for ozone generators into complete machines.

As to periods after 1979, see objections.

15. For each process at the Cryovac plant at the Washington Street property in which a chemical or chemical product is or was used during the time the property was owned or occupied by Cryovac until the present provide the following:

- a. a description of the process and how each chemical was or is used;

- b. the total quantity of each chemical used per day;
- c. the annual quantity (in measures of volume or weight) of each chemical used;
- d. the concentration of each chemical used;
- e. if water was or is used in the process, the total volume of water used per day in each process; and
- f. the total volume of water used per process, annually.

ANSWER: Grace understands the phrase "during the time" to mean at anytime during the time and not for the duration of the entire time.

- 1.
  - a. In the machine shop fabricated parts were occasionally cleaned by placement into a small degreaser which held approximately fifteen gallons. Undiluted Syn-Electro Cleaner, Magnus Solvent #9 or Magnus Solvent #1219 was used in the degreaser from time to time. Employees in the machine shop and the assembly area also occasionally obtained small amounts of trichloroethylene for use in cleaning fabricated parts by hand. Tapfree and Alumtap are believed to be lubricants applied by employees in the machine shop to taps prior to tapping.
  - b. and c. Unknown. The degreaser was not used on a daily basis. The solvent was replaced periodically. Quantities known to have been purchased are given in answer 12(a).
  - d. See answers 11 and 15.1(a).
  - e. and (f) Water was not used.
- 2.
  - a. In the machine shop cutting oils were used in metal cutting equipment for cooling and removing particles. Cool-Tool was one of the cutting oils used from time to time.
  - b. and c. Unknown. Quantities known to have been purchased are given in answer 12(a).

- d. See answers 11 and 15.2(e).
  - e. and (f) Cool-Tool was diluted with Water.
3. a. In the paint shop trichloroethylene was used on occasion for the cleaning of machine parts prior to painting. A small amount would be applied to a cloth used to rub down the parts by hand. Small quantities of trichloroethylene were also used for cleaning spray painting equipment.
- b. and (c) Unknown. Quantities known to have been purchased are given in answer 12(a).
  - d. Undiluted.
  - e. and f. Water was not used.

As to processes using other chemicals and benzene, and periods after 1979, see objections.

16. For each procedure used at any time in the past at the Cryovac plant at the Washington Street property that differs from current practices, provide the following:

- a. a description of each process and how each chemical was used;
- b. the dates that each process and chemical was used at the Cryovac plant;
- c. the total quantity of each chemical used per day;
- d. the annual quantity of each chemical used;
- e. if water was used in the process, the total volume of water used per day in each process; and
- f. the total volume of water used per process, annually.

ANSWER: For relevant past processes, see answer 15. As to other chemicals and periods after 1979, see objections.

17. For each process used by Crovac plant at the Washington Street property in which a chemical or chemical product was used or is used, provide the following:

- a. describe the waste generated by each procedure -- whether liquid, solid or gaseous, and the contents of the waste; and
- b. indicate the quantity by volume or weight of the waste generated by each process.

ANSWER: See answer 15.

1.
  - a. Some of the machine shop degreaser material evaporated or volatilized over time. After use, what remained was a liquid consisting of its remaining original constituents plus grease, oil and dirt.
  - b. Unknown.
2.
  - a. The machine shop cutting oil waste was a liquid consisting of cutting oil and metal particles (principally steel).
  - b. Unknown, but believed to be very small.
3.
  - a. Almost all of the trichloroethylene used in the paint shop assembly area or machine shop evaporated during use, because of its volatility characteristics and the nature of its use.
  - b. Unknown, but believed to be very small.

As to other chemicals and benzene, and periods after 1979, see objections.

18. For all procedures during the period Cryovac owned or occupied the Washington Street property involving the use of chemical(s) and differing from current practices, provide the following:

- a. provide the dates the procedures were in effect and describe the waste generated by each procedure -- whether liquid, solid or gaseous, and the contents of the waste; and
- b. indicate the quantity by volume or weight of the waste generated by each process each year since Cryovac commenced operations at the Washington Street property.

ANSWER: For relevant past processes, see answer 17. As to other chemicals and benzene, and periods after 1979, see objections.

19. Has trichloroethylene (TCE) or any product containing TCE been used or stored on site at the Washington Street property at any time since Cryovac owned the property? If so, indicate:

- a. each year in which TCE or a product containing TCE was purchased, and the quantity purchased;
- b. identify the storage location of the TCE or the product containing TCE;
- c. describe the containers used for storing TCE or the products containing TCE;
- d. describe the uses of TCE or products containing TCE at Cryovac, including all processes in which such products were used, and the quantities and concentrations used;
- e. describe the nature and amount of waste generated by each process and use listed in question 19.d. Indicate whether the waste was liquid, solid or gaseous and describe the components of the waste, including all chemicals and by-products of chemicals; and
- f. describe the treatment, storage and disposal methods for all above wastes.

ANSWER: Yes.

- a. See answers 11 and 12(a)
- b. See answer 12(b).
- c. 55 gallons drums.
- d. See answers 15.1(a) and 15.3(a). In addition, employees took quantities of this material home for their own use.
- e. See answer 17.3.
- f. The small amounts of paint shop liquid wastes were placed in drums kept in the paint shop. When full, these drums were moved outside to the rear of the plant. Grace believes these drums were at times carried away by haulers, except as described in answer 12(e).2.

For periods after 1979, see objections.

20. Has tetrachloroethylene or any product containing tetrachloroethylene been used or stored on site at the Washington Street property at any time since Cryovac owned the property? If so, indicate:

- a. each year in which tetrachloroethylene or a product containing tetrachloroethylene was purchased, and the quantity purchased;
- b. identify the storage location of the tetrachloroethylene or the product containing tetrachloroethylene;
- c. describe the containers used for storing tetrachloroethylene or the product containing tetrachloroethylene;
- d. describe the uses of tetrachloroethylene or products containing tetrachloroethylene at Cryovac, including all processes in which such products were used, and the quantities and concentrations used;
- e. describe the nature and amount of waste generated by each process and use listed in question 20.d. Indicate whether the waste was liquid, solid or gaseous and describe the components of the waste, including all chemicals and by-products of chemicals; and
- f. describe the treatment, storage and disposal methods used for all above wastes.

ANSWER: Yes.

- a. See answers 11 and 12(a).
- b. See answer 12(b).
- c. 55 gallon drums or 1 gallon cans.
- d. See answer 15.1(a).
- e. See answer 17.1.
- f. Grace believes that disposal was to city sewer or into waste drums stored outside in the rear of the plant. Grace believes that these drums were at times carried away by haulers, except as described in answer 12(e).1.



For periods after 1979, see objections.

21. Has 1,2-trans-dichloroethylene been used or stored on site at the Washington Street property at any time since Cryovac owned the property? If so, indicate:

- a. each year in which 1,2 trans-dischloroethylene or a product containing 1,2-trans-dischloroethylene was purchased, and the quantity purchased;
- b. identify the storage location of 1,2-trans-dichloroethylene or the products containing 1,2-trans-dichloroethylene.
- c. describe the containers used for storing 1,2-trans-dichloroethylene or the products containing 1,2-trans-dichloroethylene;
- d. describe the uses of 1,2-trans-dichloroethylene or products containing 1,2-trans-dichloroethylene at Cryovac, including all processes in which such products were used, and the quantities and concentrations used;
- e. describe the nature and amount of waste generated by each process and use listed in question 21.d. Indicate whether the waste was liquid, solid or gaseous and describe the components of the waste, including all chemicals and by-products of chemicals; and
- f. describe the treatment, storage and disposal methods used for all above wastes.

ANSWER: No.

22. Has 1,1,1-trichloroethane or any product containing 1,1,1-trichloroethane been used or stored on site at the Washington Street property at any time since Cryovac owned the property? If so, indicate:

- a. each year in which 1,1,1-trichloroethane or a product containing 1,1,1-trichloroethane was purchased, and the quantity purchased;
- b. identify the storage location of the 1,1,1-trichloroethane or the products containing 1,1,1-trichloroethane;

- c. describe the containers used for storing 1,1,1-trichloroethane or the products containing 1,1,1-trichloroethane;
- d. describe the uses of 1,1,1-trichloroethane or products containing 1,1,1-trichloroethane at Cryovac, including all processes in which such products were used, and the quantities and concentrations used;
- e. describe the nature and amount of waste generated by each process and use listed in question 22.d. Indicate whether the waste was liquid, solid or gaseous and describe the components of the waste, including all chemicals and by-products of chemicals; and
- f. describe the treatment, storage and disposal methods used for all above wastes.

ANSWER: Yes.

- a. See answers 11 and 12(a).
- b. See answer 12(b).
- c. Metal drums or 1 gallon cans.
- d. See answers 15.1(a) and 15.2(a).
- e. See answers 17.1 and 17.2
- f. Grace believes that disposal was to city sewer or into waste drums stored outside in the rear of the plant. Grace believes that these drums were periodically carried away by haulers, except as described in answer 12(e).1.

As to periods after 1979, see objections.

23. Has benzene or any product containing benzene been used or stored on site at the Washington Street property at any time since Cryovac owned the property? If so, indicate:

- a. each year in which benzene or a product containing benzene was purchased, and the quantity purchased;
- b. identify the storage location of the benzene or the products containing benzene;
- c. describe the containers used for storing benzene or the products containing benzene;

- d. describe the uses of benzene or products containing benzene at Cryovac, including all processes in which such products were used, and the quantities and concentrations used;
- e. describe the nature and amount of waste generated by each process and use listed in question 23.d. Indicate whether the waste was liquid, solid or gaseous and describe the components of the waste, including all chemicals and by-products of chemicals; and
- f. describe the treatment, storage and disposal methods used for all above wastes.

**ANSWER:** See objections.

24. Has chloroform or any product containing chloroform been used or stored on site at the Washington Street property at any time since Cryovac owned the property? If so, indicate:

- a. each year in which chloroform or a product containing chloroform was purchased, and the quantity purchased;
- b. identify the storage location of the chloroform or the products containing chloroform;
- c. describe the containers used for storing chloroform or the products containing chloroform;
- d. describe the uses of chloroform or products containing chloroform at Cryovac, including all processes in which such products were used, and the quantities and concentrations used;
- e. describe the nature and amount of waste generated by each process and use listed in question 24.d. Indicate whether the waste was liquid, solid or gaseous and describe the components of the waste, including all chemicals and by-products of chemicals; and
- f. describe the treatment, storage and disposal methods used for all above wastes.

**ANSWER:** Grace believes that one 6-oz. jar of chloroform or methyl chloroform (1,1,1-trichloroethane) may have been in stock several years ago. Nothing more is known about it.

25. Have any other chlorinated organic chemical(s) and/or product(s) containing chlorinated organic chemicals been used or stored on site at the Washington Street property at any time since Cryovac owned or occupied the property? If so, please identify each such chemical(s) and/or product(s) and provide all the information requested in a-f of questions 19-24 with regard to each of these chlorinated organic chemical(s).

ANSWER: As to other chemicals and benzene, and periods after 1979, see objections.

26. Are solid and/or liquid wastes removed from the Washington Street property and treated, stored or disposed of elsewhere? If so:

- a. describe all waste materials removed. If any contain chemical(s) or the by-product(s) of chemicals, name the chemicals;
- b. describe the container(s) of the waste(s);
- c. describe the vehicle(s) used for removal;
- d. describe how frequently and in what volume the waste(s) are removed;
- e. what is the name of the party who is responsible for the waste removal and ultimate disposal? If this is a contractual arrangement, describe the terms of the contract and the dates the contract was in effect; and
- f. for each type of waste product, give the total quantity (in units of volume or weight) that was removed from the premises at the Washington Street property for each of the years Cryovac owned the Washington Street property until the present.

ANSWER: Grace objects to interrogatory No. 26 on the grounds that information regarding disposal elsewhere is irrelevant and not reasonably calculated to lead to the discovery of admissible evidence. As to other chemicals and benzene, and periods after 1979, see objections. Without waiving the foregoing objections, Grace answers as follows (subparagraphs a-f):

- (1) General trash barrel removal on a daily basis has been handled by Frank Sarno, 26 Overlook Avenue, Burlington, Massachusetts, since the plant was built.
- (2) In addition, several Cryovac employees believe that drums of materials were picked up by a trucker or truckers, but they do not recall dates or other details.
- (3) A document No. 029272 dated May 16, 1972 (a copy of which has been previously produced to plaintiffs) suggests that "8 drums of waste oil and solvents" may have been removed then by Woburn Oil Co. No employees have any memory of this, nor does William Murphy, President of Woburn Oil Co.

27. Have the waste removal procedures described above (question 26) changed during the period of time Cryovac has owned the Washington Street property? If so, describe each waste removal procedure used at any time since Cryovac commenced operations at Washington Street. Answer questions a-e of question 26 for each waste removal procedure and indicate the dates each procedure was in effect. For each procedure indicate the total quantity of each waste product removed during the period of time Cryovac has owned or occupied the Washington Street property until the present.

ANSWER: See objection to Interrogatory No. 26. As to other chemicals and benzene, and periods after 1979, see objections.

28. Are solid and/or liquid wastes treated on the premises at the Washington Street property? If so:

- a. describe all waste materials treated. If any contain chemicals or the by-product of chemicals, name the chemical(s);
- b. describe each treatment process used;
- c. give the annual quantity of waste processed in each treatment process;
- d. describe the end-product(s) and by-product(s) of each treatment process; and

- e. describe the ultimate disposal methods employed for the end-product(s) and by-product(s) of each treatment process.

ANSWER: As to other chemicals and benzene, and periods after 1979, see objections. Otherwise, no.

29. At any time since Cryovac commenced operations at the Washington Street property, have any solid and/or liquid wastes been treated on the premises? if so, answer questions a-e of question 28 for each such treatment process, and give the dates this process was used.

ANSWER: No. As to other chemicals and benzene, and periods after 1979, see objections. Otherwise, no.

30. At any time since Cryovac commenced operations at the Washington Street property, have any liquid or solid wastes of any kind been stored on the premises for any length of time? If so:

- a. describe all waste materials stored. If any contained chemicals or the by-products of chemicals, name the chemicals and given concentrations;
- b. describe the containers used for storage. Indicate the capacity of the containers, and the materials from which they were (or are) constructed;
- c. describe the location on the property of all storage containers;
- d. for each waste product, give the time period the waste product was (or is) stored on site;
- e. for each waste product, describe the maximum quantity stored at any one time; and
- f. for each waste product that was stored and then subsequently removed from the premises, answer questions 26a-f for each waste product.

ANSWER: Yes.

- a. See answers 17, 19(f), 20(f) and 22(f).
- b. 55 gallon drums.
- c. In the paint shop and outside at the rear of the plant.
- d. Drums were held for periods varying from months to years.
- e. Approximately 10 drums.
- f. See answer 26.

As to other chemicals and benzene, and periods after 1979, see objections.

31. Are there or have there ever been any underground storage tanks on the premises at the Washington Street property? If so:

- a. indicate how many storage tanks there are or were and give exact locations of each;
- b. give dates each was in use;
- c. identify all materials stored in each tank;
- d. give the capacities of each tank; and
- e. indicate how frequently, if ever, each tank was emptied.

ANSWER: Without waiver of objections, not during the period Grace owned the property. Grace understands that a 500 or 1,000 gallon gasoline tank may have been located on the property during its use as a farm. It is believed that the tank was removed prior to the purchase of the property by Grace.

32. Are there or have there ever been any above-ground storage tanks on the premises at the Washington Street property? If so:

- a. indicate how many storage tanks there are or were;

- b. give dates each was in use;
- c. identify all materials stored in each tank;
- d. give the capacities of each tank; and
- e. indicate how frequently, if ever, each tank was emptied.

ANSWER: Without waiving objections, no.

33. Are there or have there ever been any dry wells used for storage or disposal of any waste material and/or chemical(s) at the Washington Street property? If so:

- a. indicate how many there were and give exact locations of each;
- b. give dates during which material(s) and/or chemical(s) were deposited in each well;
- c. identify all material(s) and/or chemical(s) stored or deposited in each well;
- d. identify the quantity of material(s) and/or chemical(s) stored or deposited in each well; and
- e. describe and give dates of the removal of any material deposited in any such well(s).

ANSWER: Without waiving objections, Grace has never installed nor used any such well. Grace understands that there may have been a dry well on the property during its use as a farm.

34. Are there or have there ever been any other storage containers or vessels of any kind for containing liquids used in manufacturing and related processes at Cryovac, on the premises at the Washington Street property? If so:

- a. identify and describe any such container not described in questions 31-33;
- b. give exact location(s) of each;



- c. give date(s) each was in use;
- d. identify all material(s) stored in each;
- e. give the capacities of each;
- f. give the quantities of the stored materials; and
- g. indicate how frequently, if ever, each was emptied.

ANSWER: Grace understands this interrogatory as not being directed to movable cans and drums, nor to process containers (as opposed to storage containers). Without waiving objections, no.

35. Were any of the storage containers identified in questions 31-34 ever emptied into or onto the ground on or near the premises of the Washington Street property?

ANSWER: Without waiving objections, not during the period Grace owned the property. Nothing is known regarding prior periods.

36. Were any of the storage containers identified in questions 31-34 ever ruptured or punctured, corroded, over-filled or otherwise compromised so that it leaked into or onto the ground?

ANSWER: Without waiving objections, not during the period Grace owned the property. Nothing is known regarding prior periods.

37. If the answer to question 35 or 36 is yes:

- a. identify the contents of all material spilled and/or deposited onto the ground; identify any chemicals and their concentrations;
- b. indicate the quantity of all material spilled and/or deposited onto the ground;
- c. indicate the number of incidents and the dates of each of the occurrences, or the time period of these practices;
- d. describe the exact locations of all spills and/or deposit sites; and

- e. indicate whether Woburn City, Massachusetts State or United States Environmental Protection Agency officials were notified of any such incidents, and if so, describe the content and character of the notification.

ANSWER: Not applicable.

38. Has any employee or representative of W. R. Grace & Co. or Cryovac ever disposed of any material, liquid or solid, new or used in, on or near the Washington Street property?

ANSWER: Yes.

39. Has any employee or representative of W. R. Grace & Co. or Cryovac ever had knowledge of the disposal by other parties of any material, liquid or solid, new or used, in, on or near the premises at the Washington Street property?

ANSWER: No.

40. If the answer to question 38 or 39 is yes, please provide the following:

- a. identify the party(s) that have disposed of the material at the Washington Street property. Give a list of the names of all such parties;
- b. describe the exact location of all deposited material;
- c. indicate the dates or time periods of all related activities;
- d. describe the content of all deposited material, indicate whether liquid or solid and identify any chemicals or chemical products and specify concentrations;
- e. indicate whether the material was in containers or deposited directly in or onto the ground or water;
- f. give the quantity of each deposited material;
- g. if in containers, indicate whether they were sealed; and

- h. describe the terms and conditions of any agreements, formal and informal, for the use of the premises at the Washington Street property for the disposal of any material by any part other than a representative of W. R. Grace & Co. or Cryovac.

ANSWER:

- a. W. R. Grace & Co.
- b. 1. A pit, located approximately 100 feet behind (east of) the plant building, 200-300 feet from the north and south boundaries of the property, and 500 feet from the east boundary of the property.
2. Behind the plant in the undeveloped area between the drainage ditches on the north and south sides of the property.
- c. 1. 1974.
2. Periodically.
- d. 1. See answer 12(e).2.
2. See answer 12(e).1.
- e. 1. Most of the material was emptied from drums into the pit. Some intact drums were also placed in the pit.
2. Spread on ground to dry and evaporate.
- f. 1. Unknown. There were approximately 10 55-gallon drums, full or partially full.
2. Approximately 15 gallons of material from the degreaser on each occasion.
- g. Unknown.
- h. None.

See also answer to Interrogatory No. 12.

As to other chemicals and benzene, and periods after 1979, see objections.

41. Are any liquid wastes generated at the Cryovac plant at the Washington Street property disposed of in the City of Woburn or the MDC sewer? If so, state the volume so disposed in 1981.

ANSWER: See objection regarding activities after 1979.

42. At any period of time during which Cryovac has owned or occupied the property at the Washington Street property were liquid wastes from the Cryovac plant disposed of in the City of Woburn or the MDC sewer? If so, state the annual volume for each year in which there was disposal.

ANSWER: Yes. Annual volume of discharge is unknown. As to periods after 1979, see objections.

43. Does Cryovac have a currently valid permit for sewer waste disposal?

ANSWER: See objection regarding periods after 1979.

44. For the period of time Cryovac has owned or occupied the Washington Street property indicate each of the years Cryovac has had a valid permit for sewer waste disposal.

ANSWER: As to periods after 1979, see objections. Otherwise, none.

45. Is there or has there ever been incineration of wastes at the Cryovac plant at the Washington Street property? If so, state:

- a. what materials are incinerated under current operating procedures;
- b. what materials were incinerated at any period of time during which Cryovac owned or occupied the Washington Street property, and give dates;
- c. the quantity of material incinerated; and

- d. the frequency of incineration of materials.

ANSWER: Yes.

- a. See objection regarding activities after 1979.
- b. Scrap wood, approximately 1960.
- c. Small amount during construction in approximately 1960.
- d. Once.

46. Did any representative of W. R. Grace & Co. and/or Cryovac ever test or arrange for the testing of any samples of water, soil, dust, sediment or other samples from its Washington Street property to determine whether any contaminants were present? If so:

- a. identify and describe the type of each sample (whether water, soil, etc.) and the location each sample was taken from;
- b. describe test results for each sample. List any contaminants identified, and the concentration of the contaminant;
- c. give the dates the samples were taken; and
- d. identify the laboratory or party that conducted each of the tests.

ANSWER: Not during the period prior to commencement of this action. Any tests made thereafter constitute attorneys' work product and are not discoverable.

47. Did any representative of W. R. Grace & Co. and/or Cryovac ever undertake any efforts to remove and/or arrange for the removal of any materials deposited and/or buried on the premises at the Washington Street property? If so:

- a. give the dates of all such arrangements and/or efforts;

- b. give the specific locations of all such efforts;
- c. describe the material removed;
- d. indicate how long the material had been present on site before removal;
- e. describe the removal efforts;
- f. identify all parties involved in removal efforts; and identify the location where the material was ultimately deposited.

ANSWER: As to periods after 1979, see objections. Otherwise, no.

48. Are there any wells on the Washington Street property?

If so:

- a. indicate and identify the year each well was drilled, the name of the company that drilled the well, and records of tests of the well's safe yield and groundwater hydraulic conductivity or transmissivity;
- b. describe each well's construction and type of pump and the depth at which the pump is placed. Identify materials used in well-casing and risers;
- c. give history of any operational problems with each well; describe any evidence of damage to the well or pump and describe and provide records on all repairs, including dates of repairs and names of parties providing repair work. Include description of any redevelopment of the well or well-casing;
- d. if at any time there has been any evidence of contamination from the surface of the ground entering any well, describe the contamination, the fault in the well seal, the date(s) of the occurrence(s), and all subsequent efforts to repair the damage;
- e. if at any time there has been any evidence of backflow pressure into any of the wells, describe each incident and give the dates;
- f. give the volume of water drawn from each well for each of the years that Cryovac has owned or occupied the Washington Street property; and

- g. if these wells are not the sole source of water at the Washington Street property, identify all other sources.

ANSWER: As to periods after 1979, see objections. Otherwise, no wells have been installed on the property during Cryovac's ownership. Grace has no knowledge of any earlier wells.

49. If there are no wells on the property, indicate the source of water used at the Washington Street property.

ANSWER: City of Woburn.

50. Has any representative of W. R. Grace & Co. and/or Cryovac ever arranged to have the water supply on the Washington Street property tested for contamination? If so:

- a. identify the source of each sample taken;
- b. indicate the results of tests on each sample taken. Identify all contaminants found and their concentrations;
- c. give the dates the samples were taken; and
- d. identify the laboratory or party that conducted the tests.

ANSWER: Yes.

- a. City of Woburn water supply system.
- b. None of the chemicals listed in the complaint was detected. As to other chemicals, see objection.
- c. October 21, 1981.
- d. Arnold Greene Testing Laboratories, Inc.

51. Were any representatives of W. R. Grace & Co. and/or Cryovac ever notified by any party of the presence of contaminants in, on or near the property or in the water at the Washington Street property? If so:

- a. identify the parties that received any reports;

- b. identify the parties that gave any reports;
- c. describe the substance of all reports -- what contaminants were identified, in what concentrations, and when; and
- d. give dates of all reports.

**ANSWER:** Yes.

- a. W. R. Grace & Co.
- b. Environmental Protection Agency ("EPA")
- c. EPA advised W. R. Grace orally and by letter that it had received allegations that a trench or pit had been used for disposal of wastes in 1974, that material had been disposed of on the ground on other occasions, and that a tank or dry-well had been ruptured during construction activities in the mid 1960's. EPA has refused to give W. R. Grace any additional information regarding these allegations.
- d. Various occasions during 1982.

52. Were any officials of the City of Woburn, the Commonwealth of Massachusetts and/or the United States Environmental Protection Agency ever notified by any representative of W. R. Grace & Co. and/or Cryovac of the presence of waste materials and/or contaminants in, on or near the property or in the water at the Washington Street property? If so:

- a. identify the parties that received any reports;
- b. identify the parties that gave any reports;
- c. describe the substance of all reports -- what contaminants were identified, in what concentrations, and when; and
- d. give dates of all reports.

**ANSWER:** Yes.



- a. U. S. Environmental Protection Agency.
- b. W. R. Grace & Co.
- c. See letter annexed hereto as Exhibit A.
- d. February 5, 1982.

As to any subsequent reports, see objections.

53. Identify and describe all records and/or reports of Cryovac employee complaints regarding working conditions for each year Cryovac has owned the Washington Street property. For each record and/or report:

- a. indicate its date;
- b. describe the nature of the complaint;
- c. identify each person making such complaint; and
- d. indicate if such record and/or report is or was required by federal or state agencies.

ANSWER: See objections.

54. Identify and describe all records and/or reports of work-related injuries of Cryovac employees for the period of time Cryovac has owned the Washington Street property. For each record and/or report:

- a. indicate its date;
- b. describe the nature of the injury;
- c. identify each person injured; and
- d. indicate if such record or report is or was required by federal or state agencies.

ANSWER: See objections.

55. Identify and describe any and all medical and/or health surveys or studies done on Cryovac employees during the period of time Cryovac owned the Washington Street property. For each survey and/or study:

- a. indicate the date(s) performed and completed;
- b. describe the nature of the survey and/or study;
- c. identify each person involved in the survey and/or study; and
- d. indicate if such survey and/or study is or was required by federal or state agencies.

ANSWER: See objections.

56. Identify any and all records and/or reports of citizen complaints regarding Cryovac's manufacturing practices or waste disposal at the Washington Street property during the period of time W. R. Grace & Co. and/or Cryovac has owned the Washington Street property.

ANSWER: See answer 51. EPA has refused to divulge the source or sources of these allegations.

57. Identify and name each W. R. Grace & Co. and/or Cryovac officer or employee responsible for each of the processes discussed in questions 15 through 25.

ANSWER: Vincent A. Forte, assisted by others including the Plant Superintendent, Plant Manager, General Foreman and area supervisors, were the employees at the plant with principal responsibility for such processes. As to periods after 1979, see objections.

58. Identify and name each W. R. Grace & Co. and/or Cryovac officer or employee responsible for contracting and/or overseeing the activities described in questions 7 and 8.

ANSWER: Vincent A. Forte, occasionally assisted by others including the Plant Superintendent and/or Plant Manager, were the employees at the plant with principal responsibility for such activities. As to periods after 1979, see objections.

59. Identify and name each W. R. Grace & Co. and/or Cryovac officer or employee responsible for purchase, inventory and supply of the chemical(s) described in questions 11 and 12.

ANSWER: Supervisors in area in which the chemical was to be used initiated or approved a request which was subject to approval by the General Foreman. The purchasing area purchased the chemical. As to periods after 1979, see objections.

60. Identify and name each W. R. Grace & Co. and/or Cryovac officer or employee responsible for the waste treatment, storage and disposal practices described in questions 26 through 45.

ANSWER: Responsibility for storage and disposal of waste was shared between those who stored and disposed of the waste, their area supervisors, the General Foreman, and plant management. As to periods after 1979, see objections.

61. Identify and name the W. R. Grace & Co. and/or Cryovac officer or employee responsible for overall operations at Cryovac during each of the years W. R. Grace & Co. and/or Cryovac has owned the Washington Street property and include the following:

- a. the name, and dates of employment for this position, of each officer and employee;
- b. the present address of each officer and employee;
- c. the present relationship of each officer or employee with Cryovac; and
- d. the total years of employment of each officer or employee with Cryovac.

ANSWER: 1. a. William J. Rothfuss, 1960-62.

- b. 20 Busit Avenue  
Greenville, SC 29609
  - c. None.
  - d. 1951-63.
- 2.
  - a. Joseph Abely, 1962.
  - b. Vice President of the Board  
R. J. Reynolds Industries, Inc.  
Winston Salem, NC 27102
  - c. None.
  - d. 1956-1962.
- 3.
  - a. Vincent A. Forte, 1962-1979.
  - b. 369 Washington Street  
Woburn, Massachusetts
  - c. General Manager.
  - d. 1954-1979.

As to periods after 1979, see objections.

62. Identify and name all W. R. Grace & Co. and/or Cryovac employees who, in the course of their work at Cryovac, handle or use any chemicals and/or their waste products or by-products and include the following:

- a. the name, title and dates of employment for this position;
- b. the present address of each employee;
- c. the present relationship of each employee with Cryovac; and
- d. the total years of employment of each employee with Cryovac.

ANSWER: As to periods after 1979, see objections.

63. Identify each and every document in possession of any officer or employee of W. R. Grace & Co. and/or Cryovac that relates to the storage, treatment and/or disposal of wastes from Cryovac or any activities at the Washington Street property during the period of time W. R. Grace & Co. and/or Cryovac owned the Washington Street property, and include the following:

- a. the nature, title and date of each document;
- b. the location and present possessor of each document; and
- c. whether the document has been provided to any federal or state agency(s).

ANSWER: See objections.

64. Identify each and every document in the possession of any officer or employee of W. R. Grace & Co. and/or Cryovac that relates to the purchase, storage and use of all chemicals and products for Cryovac, during the period of time W. R. Grace & Co. and/or Cryovac has owned the Washington Street property, and include the following:

- a. the nature, title and date of the documents;
- b. the location and present possessor of each document; and
- c. whether the document has been provided to any federal or state agency(s).

ANSWER: See objections.

65. Identify each and every document in the possession of any office employee of W. R. Grace & Co. and/or Cryovac that relates to any attempts to identify and/or detect the presence of any waste materials, whether liquid or solid, or any contaminants

on the Washington Street property during the period of time W. R. Grace & Co. and/or Cryovac has owned the Washington Street property, and include the following:

- a. the nature, title, and date of the document;
- b. the location and present possessor of the document;  
and
- c. whether the document has been provided to any  
federal or state agency(s).

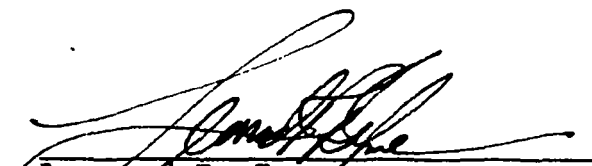
**ANSWER:** None during the period prior to commencement of this action, except Exhibit A annexed hereto. Any documents created thereafter constitute attorneys' work product and are not discoverable.

As to objections,

Michael B. Keating  
Michael B. Keating  
William J. Cheeseaman  
James K. Brown  
Foley, Hoag & Eliot  
One Post Office Square  
Boston, MA 02109  
(617) 482-1390

Dated: January 29, 1986

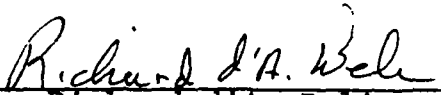
I declare on behalf of W. R. Grace & Co., under penalty of perjury, that the foregoing is true and correct to the best of my information and belief. Executed on .



Leonard R. Byrne  
Vice President-Finance

CERTIFICATE OF SERVICE

I, Richard d'A. Belin, hereby certify that on the 29th day of January 1986 the attached Supplemented Answers of W. R. Grace & Co. To Plaintiffs' Interrogatories (First Set) were delivered by hand to Jay Richard Schlichtmann, Esquire, Schlichtmann, Conway & Crowley, 171 Milk Street, Boston, Massachusetts 02109 and to Donald Frederico, Esquire, Hale & Dorr, 60 State Street, Boston, Massachusetts 02109.

  
Richard d'A. Belin



B. Helch

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

.....  
ANNE ANDERSON et al.,

Plaintiffs,

v.

W. R. GRACE & CO. et al.,

Defendants.  
.....

CIVIL ACTION  
No. 82-1672-S

GRACE'S AMENDED ANSWERS TO PLAINTIFFS'  
FIRST SET INTERROGATORIES 11 and 12

Defendant W. R. Grace & Co. ("Grace") hereby submits amended answers to Plaintiffs' First Set Interrogatories No. 11 and 12 as follows:

11. Describe each and every chemical or product containing chemicals that were or are used in W. R. Grace & Co.'s and/or Cryovac's operations at the Washington Street property at any time since the operations commenced. Give product names and generic terms for the chemicals.

ANSWER: Cool Tool - 33% 1,1,1-trichloroethane.

Syn-Electro Cleaner - 11.74% 1,1,1-trichloroethane.  
(By weight)

Trichloroethylene.

Magnus Solvent #9 - 10% tetrachloroethylene.

Magnus Solvent #1219 - 5% tetrachloroethylene.

Tapfree - 85% 1,1,1-trichloroethane

Alumtap - 5-10% tetrachloroethylene

Loctite Primer T - 86-90% 1,1,1-trichloroethane

Beltraction Penetrating Oil - 51% 1,1,1-trichloroethane

As to other chemicals and benzene, and periods after 1979, see objections.

12. For each chemical or product containing chemicals listed under question 11, state:

- a. the quantity purchased for each year that Cryovac occupied the property at Washington Street until present;
- b. identify all locations where each chemical or product was or is stored on site, and describe the storage and/or processing containers;
- c. state what is, or has been the maximum amount of this chemical or product stored on site at any one time;
- d. state how frequently deliveries of this chemical or product are received; and
- e. state whether there have been any spills or disposal of this chemical on the premises of the Washington Street property. If so, provide all records and/or a description of each incident. Give dates, the names and amounts of each chemical involved, and the exact locations.

ANSWER:

The figures below represent the specific purchases that Grace has been able to identify, through existing documents through the date of the closing of Wells G and H on May 22, 1979.

a. Cool Tool

1972 - 5 gallons (2/3 gallons 1,1,1-trichloroethane)

1974 - 7 gallons (2 1/3 gallons 1,1,1-trichloroethane)

1975 - 5 gallons (1 2/3 gallons 1,1,1-trichloroethane)

1977 - 2 gallons (2/3 gallon 1,1,1-trichloroethane)

Syn-Electro Cleaner

1963-1967 1485 gallons

trichloroethylene

1964 - 55 gallons

1966 - 55 gallons

1972 - 55 gallons

1973 - 55 gallons

Magnus Solvent #9

1974 - 110 gallons (11 gallons tetrachloroethylene)

1975 - 220 gallons (22 gallons tetrachloroethylene)

Magnus Solvent #1219

1974 - 385 gallons (approximately 19 gallons tetrachloroethylene)

Tapfree

1974 - 1 gallon

1975 - 1 gallon

1976 - 2 gallons

1977 - 1 gallon

1979 - 96 oz.

Alumtap

1972 - 6 gallons

Loctite Primer T

1975 - 264 oz.

1976 - 1200 oz.

Beltraction Penetrating Oil

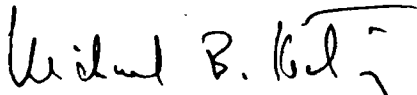
1977 - 6 spray cans

- b. Trichloroethylene was held in a 55-gallon drum as received in the paint shop, for use as needed. All of the other materials were held in the machine shop area in drums or one gallon containers or in spray cans as received, for use as needed, except for the Loctite Primer T, which may have been used in the assembly area.
- c. The largest amount of any one of these chemicals held on site at any one time was generally one or two 55- gallon drums.
- d. See answer 12(a).
- e. Yes.
1. Approximately fifteen gallons of material from the degreaser in the machine shop was disposed of on occasion by spreading it on the ground in the area between the two drainage ditches in the rear of the plant on a sunny day for drying and evaporation. All of the substances contained in this material are not known, but substances used in the degreaser from time to time included small amounts of 1,1,1-trichloroethane or tetrachloroethylene. It is believed that no trichloroethylene was used in the degreaser.
  2. In 1974 a pit was dug in the area behind the building. It is estimated that approximately 6 to 10 filled or partially filled drums of accumulated paint sludge were emptied or placed into the pit. The pit was covered with dirt shortly after it was opened. Constituents of the paint sludge are not known, but substances used in processes yielding paint sludge as a waste byproduct from time to time might have included small amounts of trichloroethylene, and one or more of the drums placed in the pit was found to contain some trichloroethylene.
  3. It is believed that employees might occasionally have discarded small amounts (a quart or less) of materials at the rear of the plant after obtaining a small quantity from the paint shop for wiping down machines or parts by hand. It is not known what substances were so discarded.

4. It is believed that employees might occasionally have poured materials possibly containing chemicals named in the Amended Complaint down one or more of the drains in the plant.

As to other chemicals and benzene, and periods after 1979, see objections.

By its attorneys,



---

Michael B. Keating  
William J. Cheeseman  
Sandra L. Lynch  
Marc K. Temin  
Foley, Hoag & Eliot  
One Post Office Square  
Boston, Massachusetts 02109  
(617) 482-1390

Dated: 4/8/86

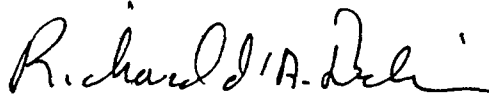
I declare on behalf of W. R. Grace & Co. that the foregoing  
is true and correct to the best of my information and belief.

---

Leonard W. Byrne  
Vice President - Finance

CERTIFICATE OF SERVICE

I, Richard d'A. Belin, hereby certify that on the 8th day of April 1986 the attached Grace's Amended Answers To Plaintiffs' First Set Interrogatories 11 and 12 were delivered by hand to Jan Richard Schlichtmann, Schlichtmann, Conway & Crowley, 171 Milk Street, Boston, MA 02109 and Jerome P. Facher, Hale & Dorr, 60 State Street, Boston, MA 02109.

A handwritten signature in cursive script, reading "Richard d'A. Belin". The signature is written in dark ink and is positioned above a horizontal line.

Richard d'A. Belin

Tank Equi. 3 in equals 11 gal.  
Tank holds 110 gal.

Tank # 1

Formula

4 to 10 ozs  
per gal.

Wyandotte B. N. Cleaner:

4 to 10 ozs. per gal water

Fill tank up to 24" high with water which is 88 gal.

Then add 880 ozs. or 55 lbs.

Mix well.

Then turn temperature up 120 to 210 F°.

Tank # 2

Rinse tank

Tank # 3

Formula

3 H<sub>2</sub>O to 1

Add water first 59 gal or 16 inches.

Then add Mureatic acid in small amounts-

Full amount will be 29 gal or 8 inches.

Then mix.

Tank # 4

Formula

6 ozs. to 1 gal.

Cyanobrick Sodium Cyanide 96% min.

Add water first 88 gal or 24" high

Then add Sodium Cyanide 33 lb. or 528 ozs.

Tank # 5

Step #1

Fill tank to 24" level or 88 Gal

Then add Zin-O-Lyte Salts 132 lbs.

stirring well for 1 to 2 hours. Let settle  
for 6 to 8 Hours.

Step # 2

Zinc Dust 3 lb mix well let settle and pump in  
plating tank.

Step # 3

Take warm water and mix agent "O"

If called for table is still plating 10 lbs- 100 gal  
Barrel Plating 3 lbs. - 100 gal.

Step # 4

Zin-O-Lyte Brightener

Mix well with warm water first then add as used  
table 1.5 lbs. per 100 gal.

Step # 5

When solution is in tank activate solution by  
putting a brass rod in solution attached to the  
anode rod. The activation takes place when the  
rectifier is turned up 1 volt and amp. same for  
1 to 2 hours.

CHEMICALS USED

MAX AMP

~~B. N. Cleaner~~

Zin-O-Lyte Zinc

Zin-O-Lyte Brightener

Zin-O-Lyte Salts

Cyanobrick Sodium Cyanide

Zin-O-Lyte Addition Agent "O"

Zin-O-Lyte Zinc Dust



TO: P. Shalline/Woburn

FROM: T. E. Hamilton

CC: V. A. Forte/Woburn  
R. K. Stewart/Duncan

DATE: June 23, 1978

SUBJECT: Ethylene Dichloride (EDC)  
or 1,2-Dichloroethane

Recently NIOSH released a bulletin on EDC stating that it is a suspect human carcinogen. EDC is used at Woburn occasionally for the purpose of glueing logic boards. NIOSH recommends that exposures be minimized and limited to as few employees as possible. They feel that there is no safe level of exposure to EDC and the previously recommended level of 5 ppm for an 8 hour Time Weighted Average (TWA) may not provide adequate protection from potential carcinogenic effects.

Air samples were collected during the glueing operation on employee Sotoris in December '77 and January '78. The TWA recorded during those samples was 8.3 ppm. See my letter to you dated January 23, 1978. As a result of the bulletin, we would recommend that any employees who work with EDC be required to wear personal protective equipment such as an organic vapor respirator. The amount of EDC used in Woburn is very small and probably would not justify the installation of exhaust ventilation. Another alternative is to find a substitute for the EDC that is less toxic.

If you have any questions, please call.

Thomas Hamilton

T. E. Hamilton

TEH:sg

CRYOVAC DIVISION  
W.R. GRACE & CO.  
Duncan, South Carolina

TO: R. K. Stewart

DATE: May 3, 1985

2486

FROM: D. N. Page

SUBJ: AXTON - CROSS  
PAYMENTS

Per your request I have researched Cryovac's history regarding payments to Axton-Cross Company. Our records indicate that we did not conduct any business with Axton-Cross prior to 1979. I have summarized our payments for the years 1979 - 1984 below. Copies of invoices are attached for the period 1981 - 1984. No payments have been made to this vendor in 1985.

<u>YEAR</u>	<u>TOTAL PAYMENTS</u>
1979	\$ 240.00*
1980	996.00*
1981	2,616.18
1982	2,602.50
1983	2,823.75
1984	<u>2,867.70</u>
<u>TOTAL</u>	<u>\$12,146.13</u>

\*Copies of invoices not easily attainable. If needed let me know.

*Doug*

D. N. Page

Attachments

RECEIVED BY

MAY 6 1985

LEGAL DEPARTMENT  
CAMBRIDGE, MA

TC: R. A. Bolton - Mississauga  
H. N. Cale - Reading  
R. W. Edgeworth - Simpsonville  
V. A. Forte - Woburn  
R. G. Kinard - Iowa Park  
H. Jarnagan - Cedar Rapids  
C. J. Scovel  
J. Scruggs - GDS

Date: May 13, 1977

From: D. A. Wamer

Subject: Occupational Exposure to Benzene

cc: F. W. Greenough  
R. K. Stewart


RECEIVED  
MAY 13 1977  
CRYOVAC DIV.

You have received a copy of the May 3, 1977, Emergency Temporary Standard for Occupational Exposure to Benzene. There are two dates which require some action. May 21, 1977, is the effective date of the standard; June 21, 1977, is the date when "every employer who has a place of employment where benzene is present shall report (same) to the nearest OSHA office....".

Please report to me, negative reports requested, on this subject:

1. We will not use benzene or products containing benzene by that name or any of the synonyms listed in Attachment A in any plant or plant process.
2. Laboratory usage under controlled conditions and laboratory quantities not to exceed one gallon will be excluded from the ban. Laboratories are expected to use the material under hoods with adequate ventilation and protective clothing, in particular gloves and eye protection.
3. Your survey should pay particular attention to shop/maintenance usage. The substance may be found in metal cleaning, degreasing compounds, possibly in aerosol containers, and should be removed from usage.
4. Should the substance be found in usage and in your opinion there is no substitute, you should immediately begin a program to meet the temporary standard. Please notify us of any such usage and perhaps we can help find a substitute.

We would appreciate your report, negative reports required, by the 5/28/77 date.

  
D. A. Wamer

DAW:ec

Attachment - Listing from Toxic Registry

CY14000. BENZENE

CAS: 000071432 MW: 78.06 MOLFM: C6-H6

WLN: R

SYN: BENZEEN (Dutch) • NITRATION BENZENE • BENZEN  
(Polish) • BENZIN • BENZINE • BENZOL •  
BENZOLE • BENZOLENE • BENZOLO (Italian) •  
BICARGURET of HYDROGEN • CARBON OIL •  
COAL NAPHTHA • CYCLOHEXATRIENE • FENZEN  
(Czech) • MOTOR BENZOL • MINERAL NAPHTHA  
• PHENE • PHENYL HYDRIDE • PYROBENZOL  
• PYROBENZOLE

TXDS: inh-hmn LCLo:20000 ppm/5M	29ZUAB -,-.53
inh-hmn TCLo:210 ppm TFX:BLD	27ZXA3 -.341.63
ort-rot LD50:3800 mg/kg	TXAPA9 19,699.71
inh-rot LC50:10000 ppm/7H	28ZRAQ -.113.60
ipr-rot LDLo:1150 mg/kg	TXAPA9 1,156.59
ort-mus LD50:4700 mg/kg	HYSAAV 32,349.67
skn-mus TDLo:1232 mg/kg/52W	BJCAAI 16,275.62
TFX:CAR	
ipr-mus LD50:468 mg/kg	SCCUR* -.1.61
ort-dog LDLo:2000 mg/kg	monumak 4,1313.35
inh-mus LDLo:570 mg/kg	27ZRAJ 1,156
scu-lrg LDLo:1400 mg/kg	HBAJAK 4,1313.35

AQTX:

REVIEW: Carcinogenic Review - 40 IARC\*\* 7,217.74

U.S. OCCUPATIONAL STANDARD USOS- FEREAC 37,22139.72

air:TWA 10 ppm; CL 25 ppm; PK 50  
ppm/10M/8H

CRIT DOC: NIOSH Rec'd Std-air:TWA 10 NIOSH\*  
ppm

D. A. Wamer/Duncan

May 19, 1977

V. A. Forte

P. V. Shalline

Benzine Exposure

I have checked the office and plant for materials containing Benzine and found none that listed this ingredient. However, safety data sheets are being requested from the manufactures of all materials used in Woburn, as some of the cleaners list the ingredients as "caustic alkali" and nothing else. If any of the data sheets show the presence of Benzine, I will notify you of the material and the action taken.

P. V. Shalline

Sam Knight / Duncan

March 17, 1978

Paul Shalline / Woburn

Benzene

A review of the Woburn facility shows no product containing Benzene, nor do we use it by itself. However, Xylol is listed as an ingredient in our concrete floor sealer made by Grace. As this is in the Benzene-Xylene family, do I need to get rid of the floor sealer? We only use it during the summer when the doors are open and the roof and floor fans can be used. The fumes are quite strong, especially when a large area has been covered.

Enclosed is a page taken from a toxicology book showing the Benzene-Xylene relationship.

Paul V. Shalline

PVS/ek  
Enc.

*File toxic list.*

TO: P. V. Shalline - Woburn

Date: March 13, 1978

From: S. M. Knight

Subject: Benzene - OSHA  
Permanent Standard

March 13, 1978, is the date that the permanent OSHA standard for Benzene goes into effect. I have not heard from you concerning the results of your plant survey for liquid substances containing Benzene.

I know that this survey is time consuming. Several of the plants that have replied made an initial survey and are now in the process of requesting material safety data sheets (OSHA Form 20) from vendors of suspect mixtures.

One plant wishes to keep a small quantity of Benzene in a sealed container in the lab for test work.

This is permissible as long as:

- (1) Initial monitoring is made to insure the exposure measurement is below the 0.5 ppm TWA action level. (A copy of this initial monitoring should be kept on file.)
- (2) The sealed containers of Benzene are properly labeled.
- (3) Employees using Benzene are instructed in the hazards of exposure and provided protective clothing where necessary.

I hate to keep writing, requesting so much information from you, but all I can say is that it will probably get worse. There are so many new standards coming out to keep up with. I appreciate your help in compiling the information.

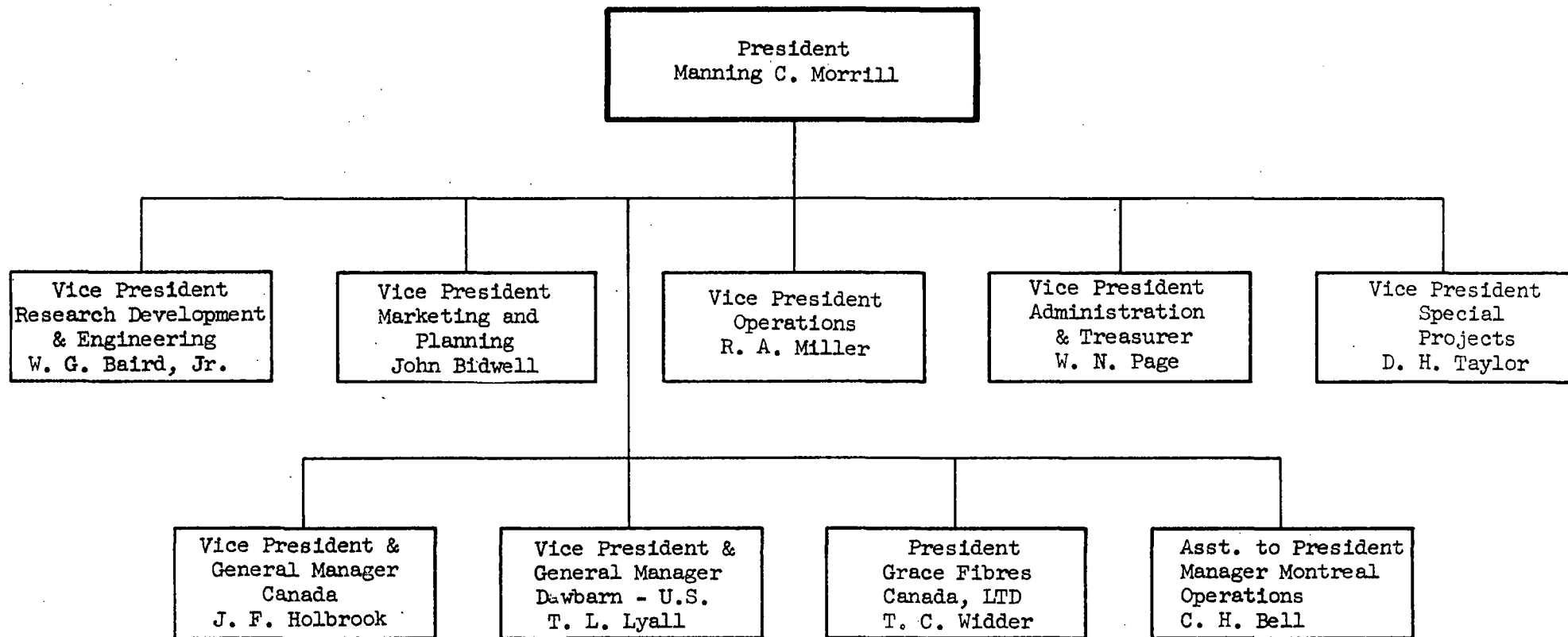
*Sam*  
S. M. Knight

SMK:ec

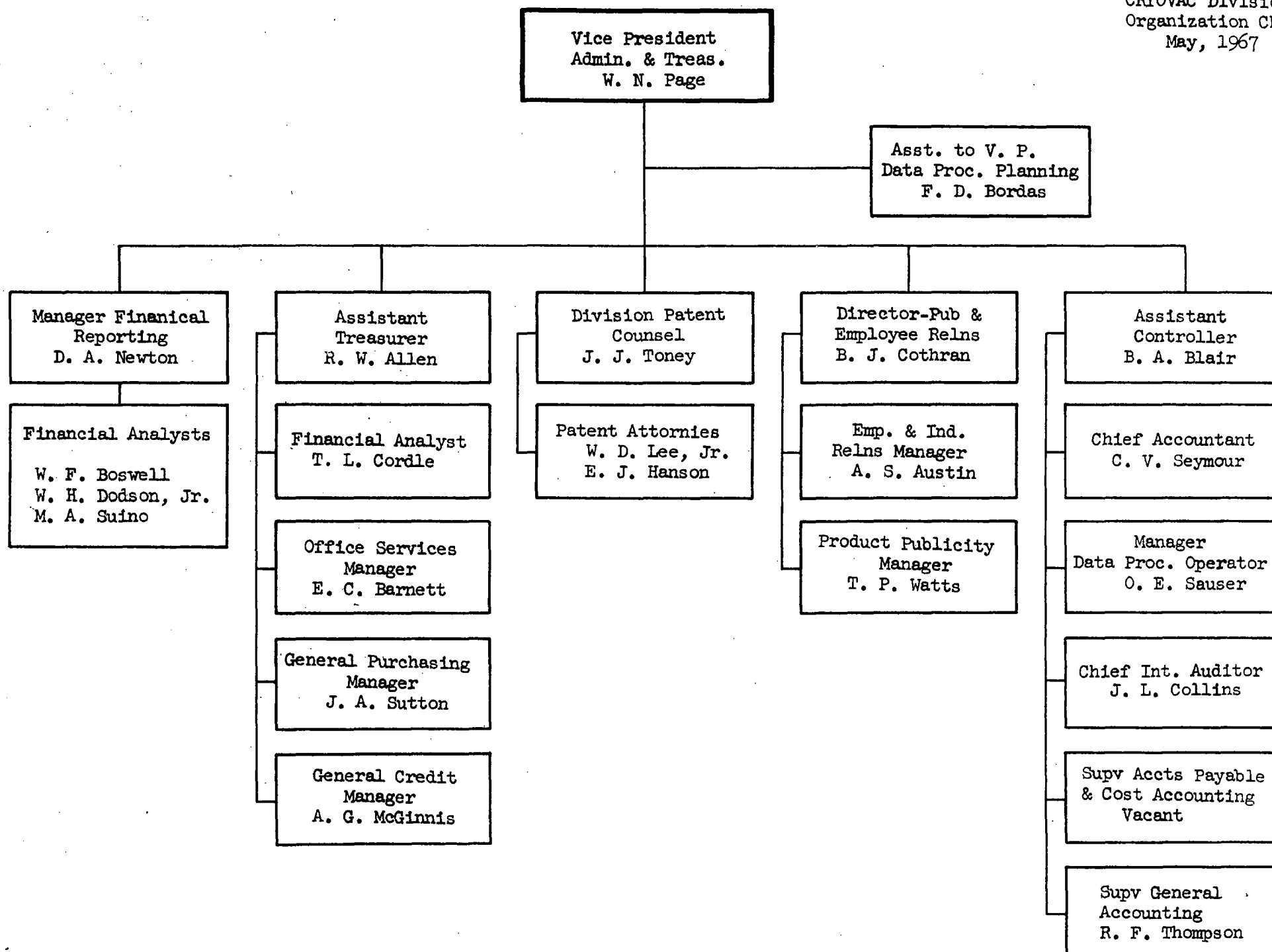
RECEIVED  
MAR 15 1978  
CRYOVAC

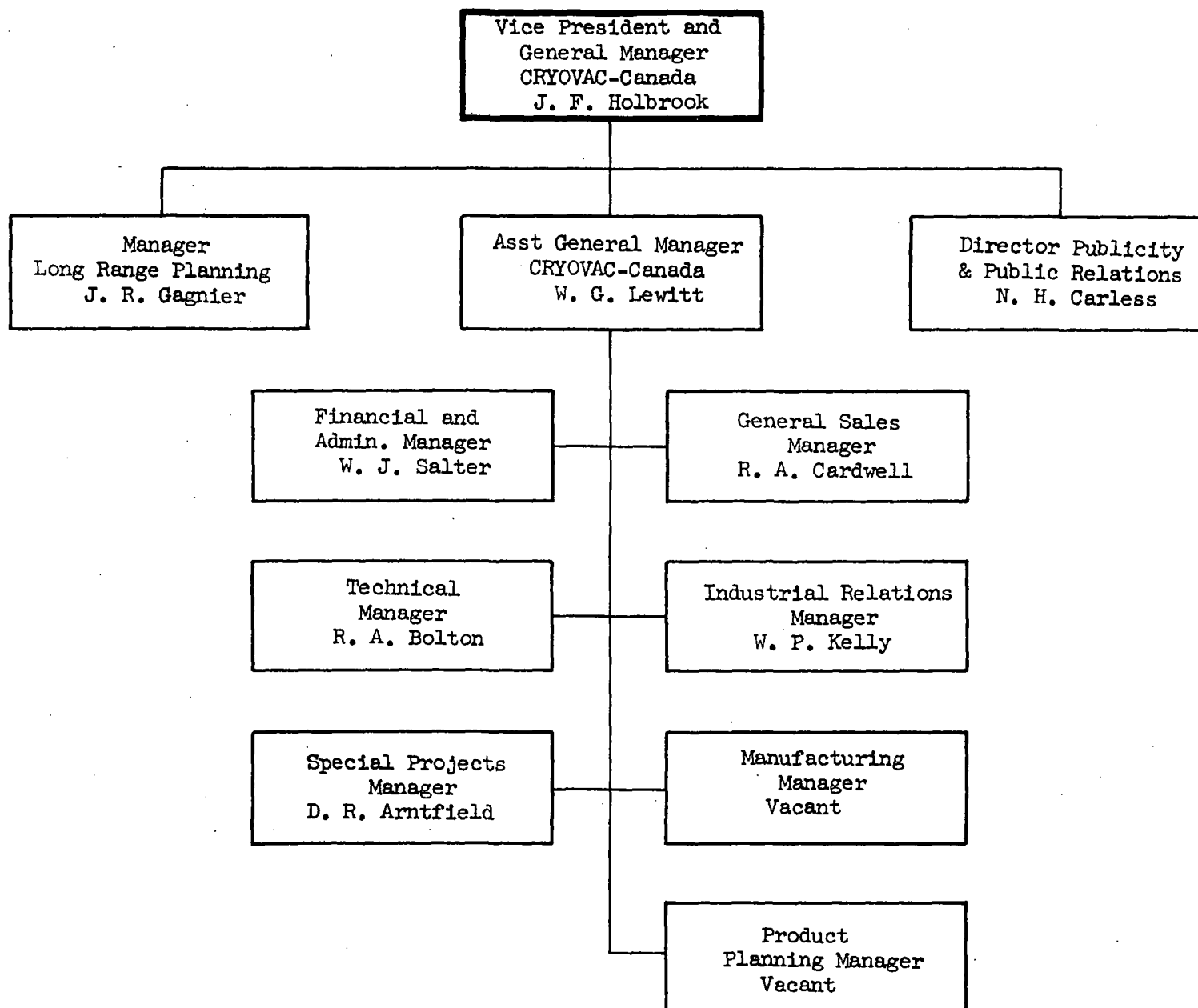
*Lt. D. H. Taylor/Robert*

W. R. Grace & Co.  
CRYOVAC Division  
Organization Chart  
May, 1967

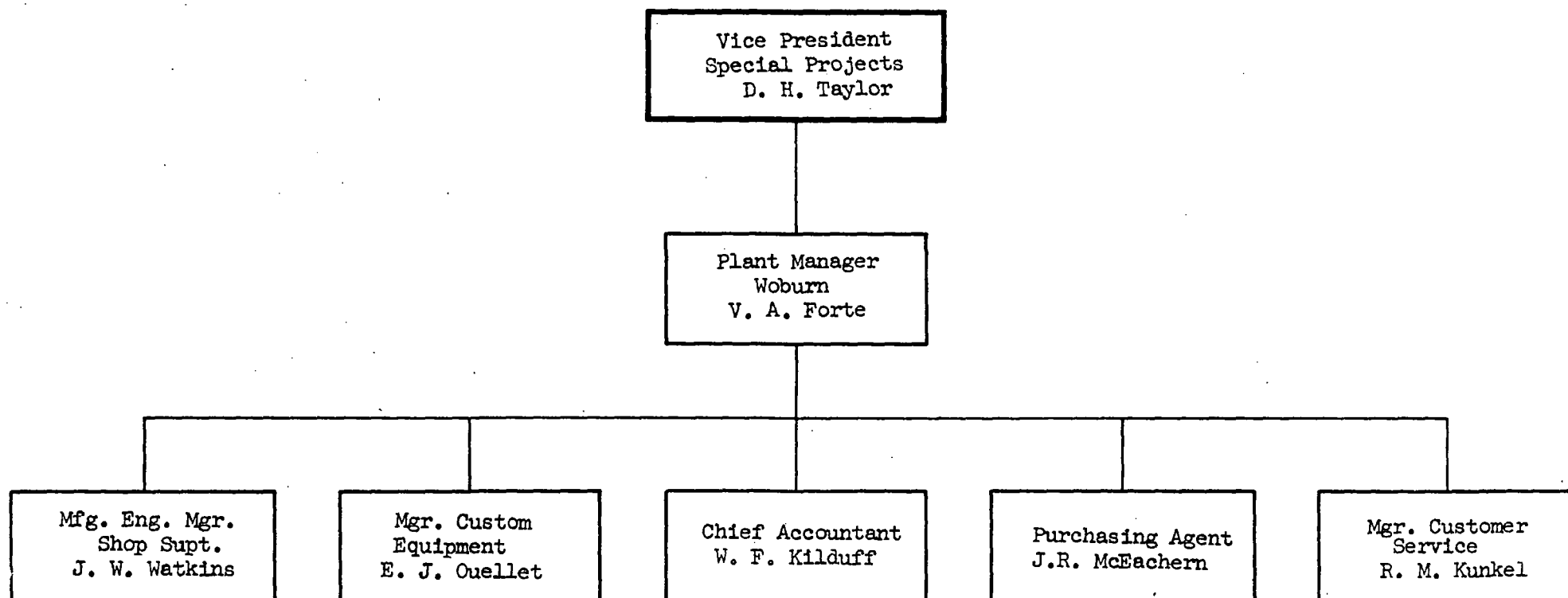


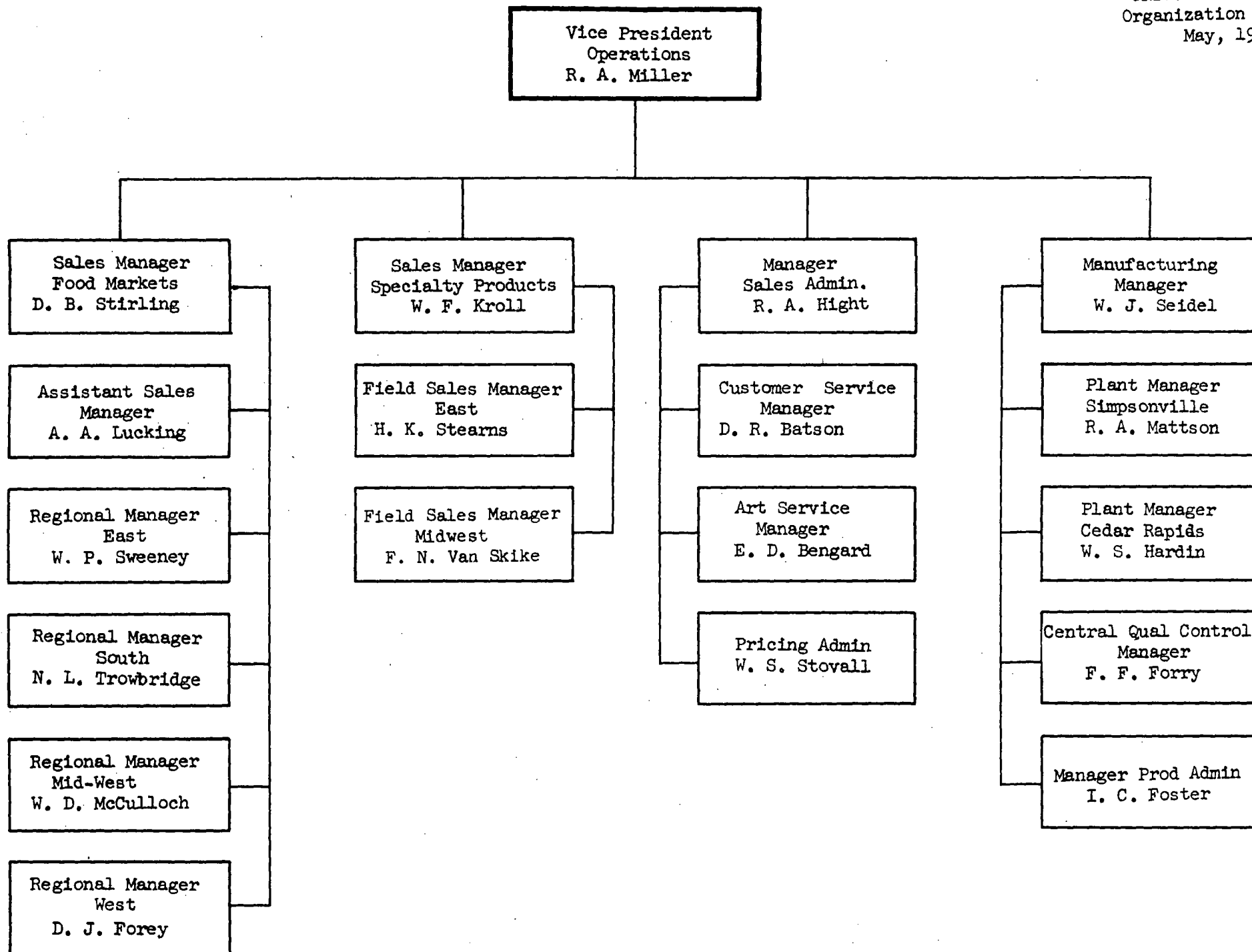


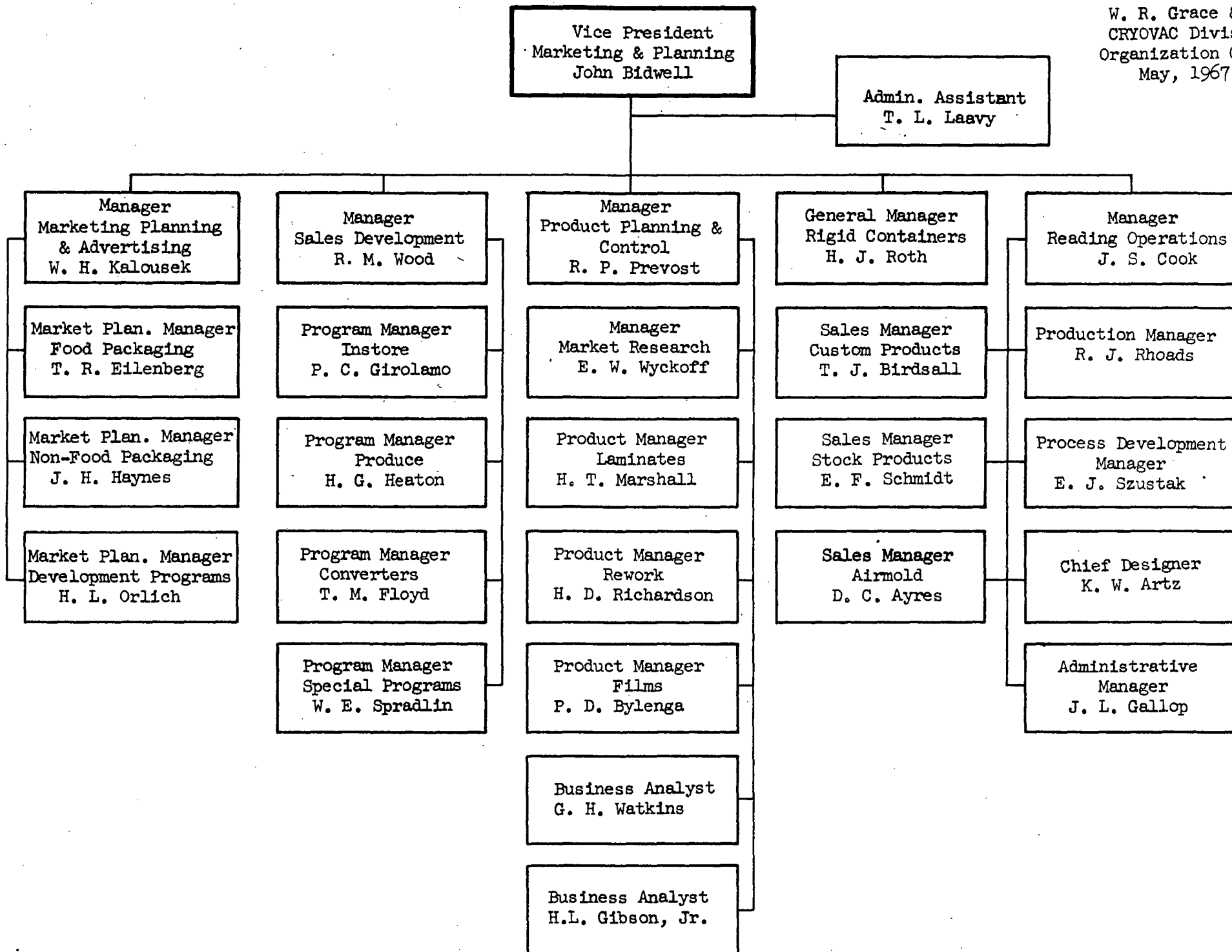


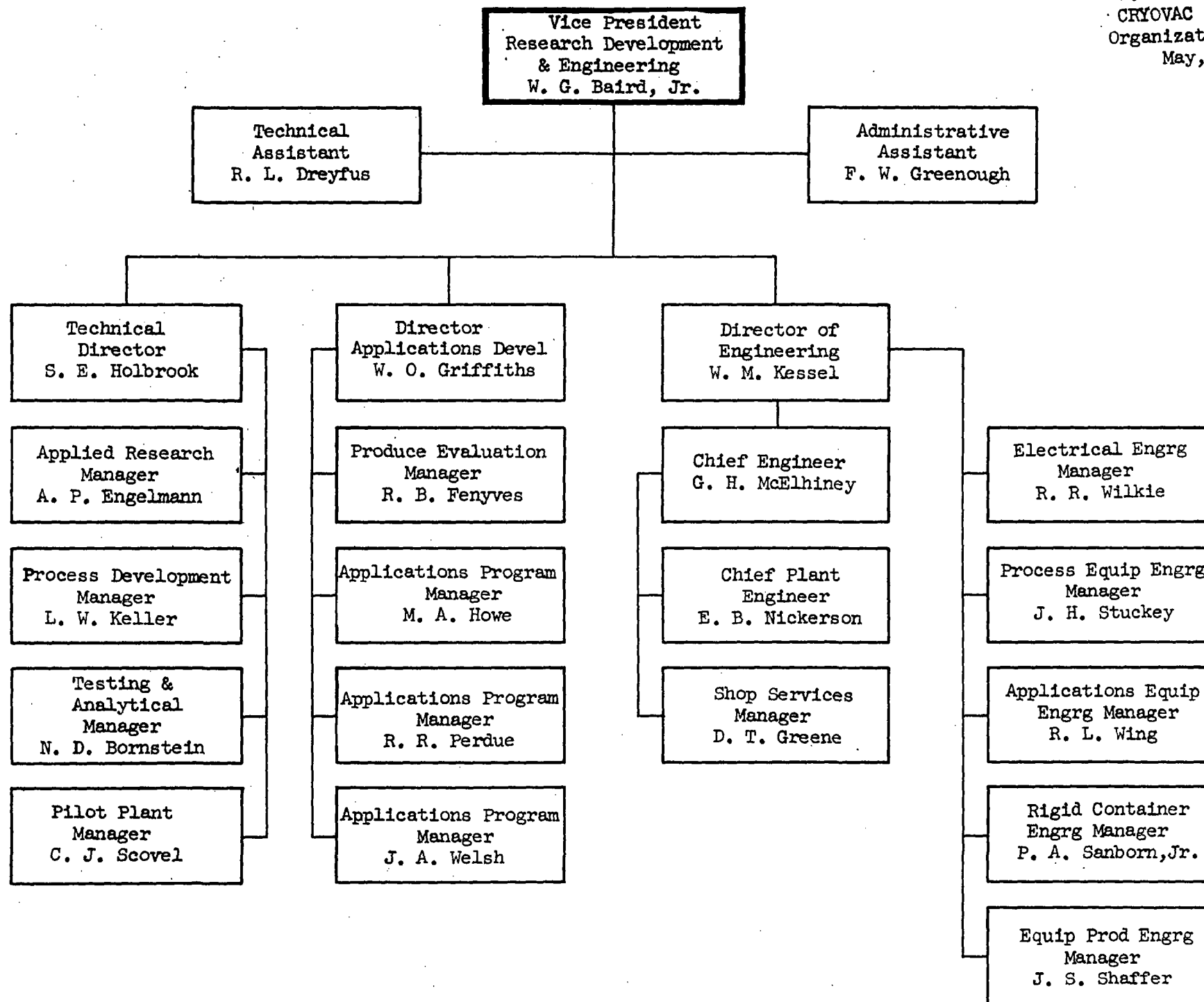


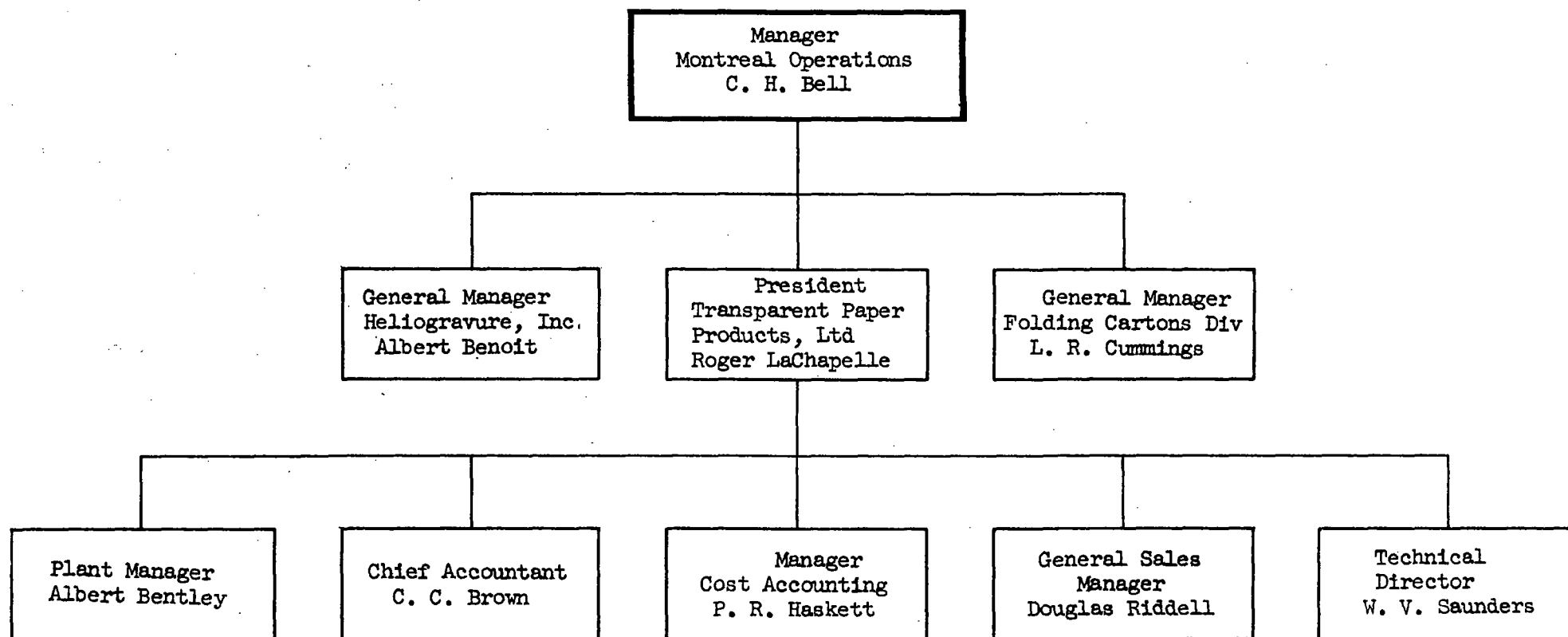
W. R. Grace & Co.  
CRYOVAC Division  
Organization Chart  
May, 1967



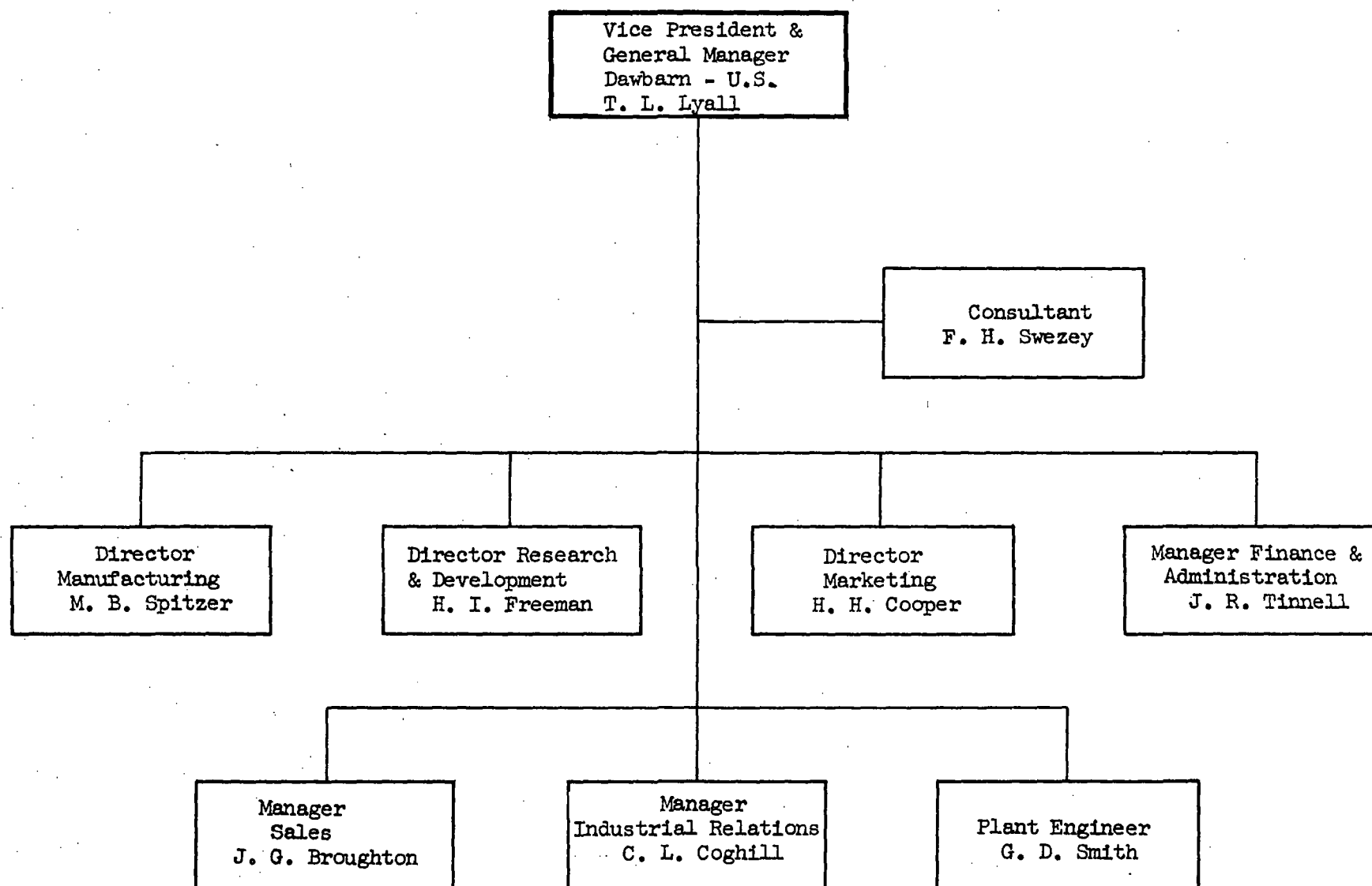








W. R. Grace & Co.  
CRYOVAC Division  
Organization Chart  
May, 1967





*V.A. Forte, Woburn*

W. R. GRACE & CO.

CRYOVAC DIVISION

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ORGANIZATION

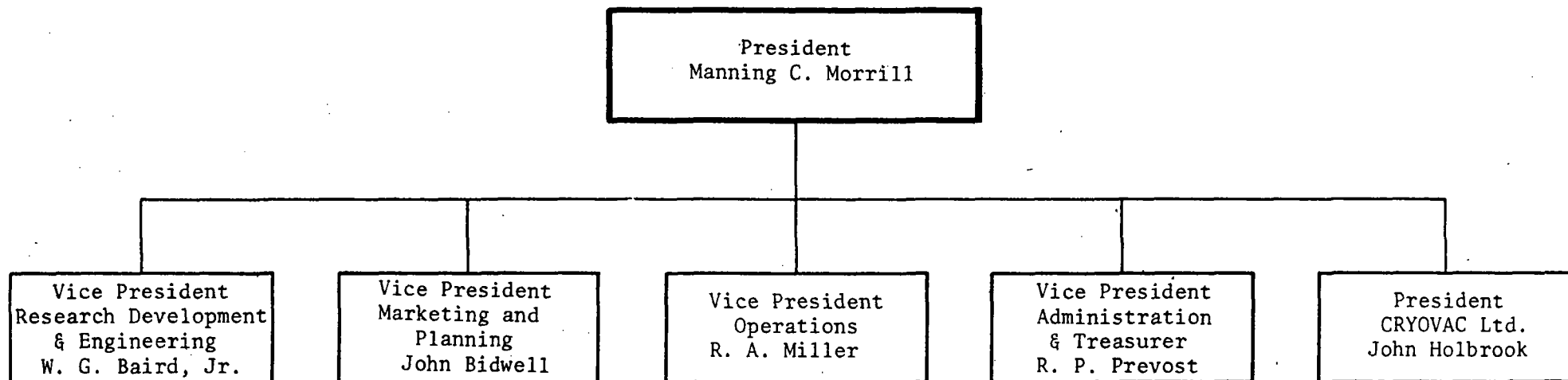
And

PERSONNEL

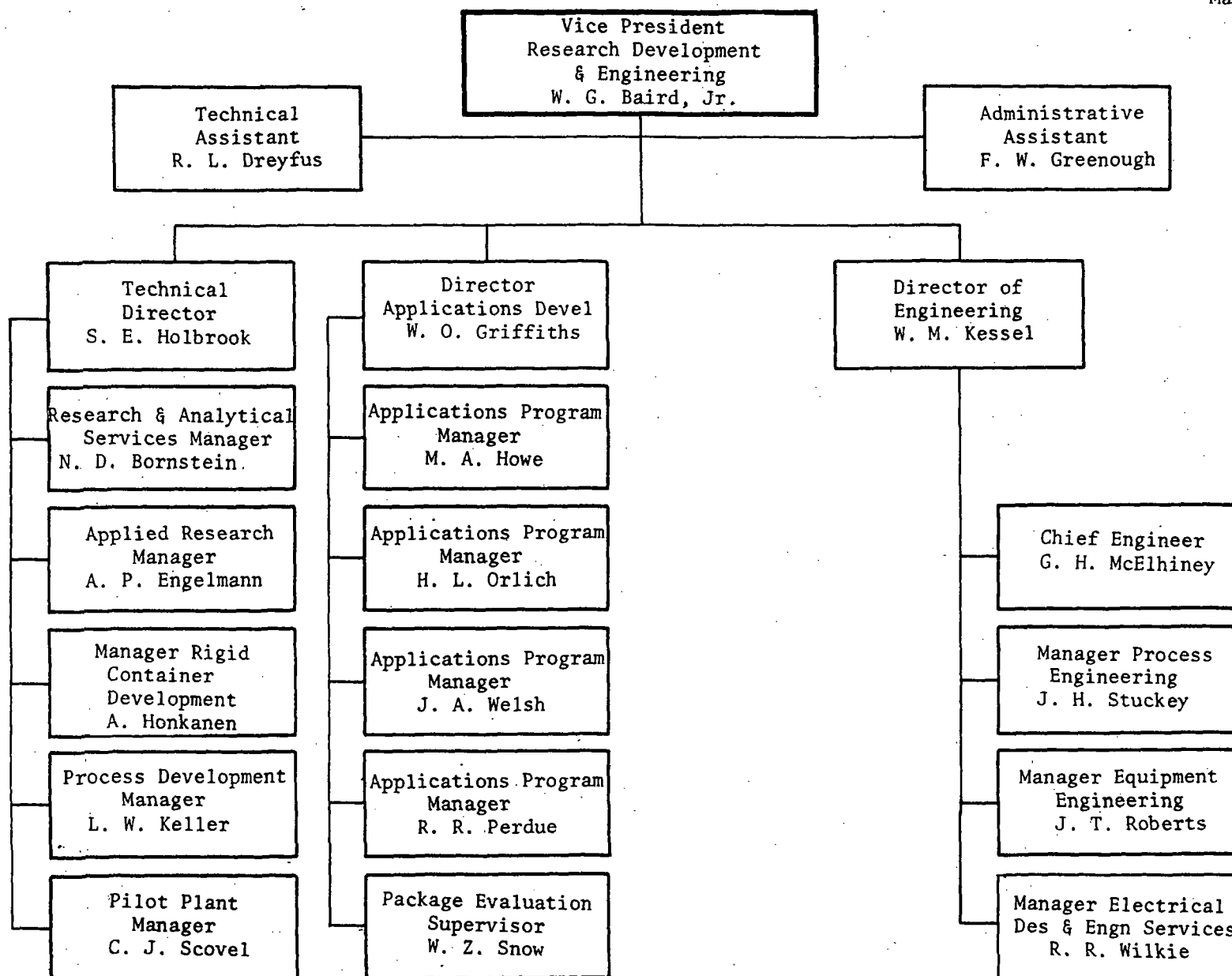
March, 1969

169 1165  
169 1165

W. R. Grace & Co.  
CRYOVAC Division  
Organization Chart  
March, 1969



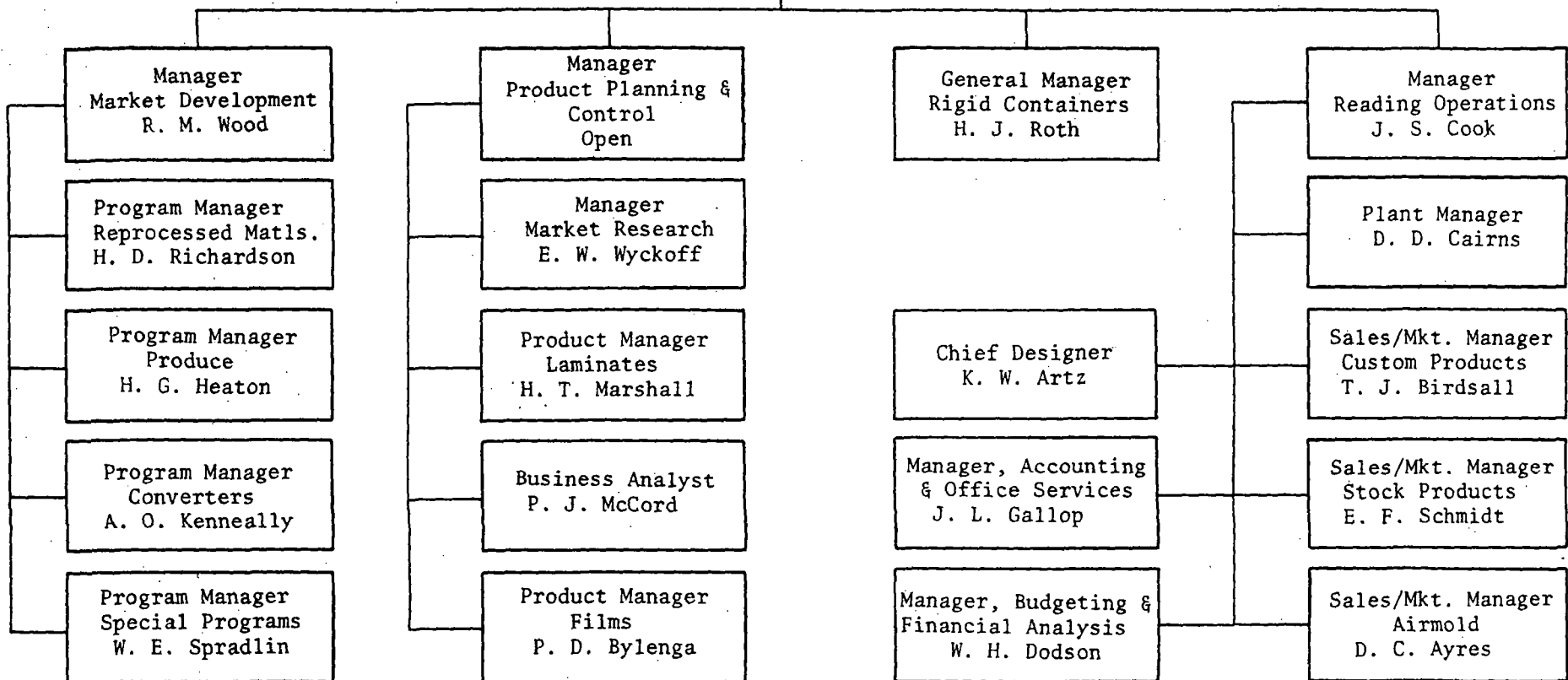
W. R. Grace & Co.  
CRYOVAC Division  
Organization Chart  
March, 1969



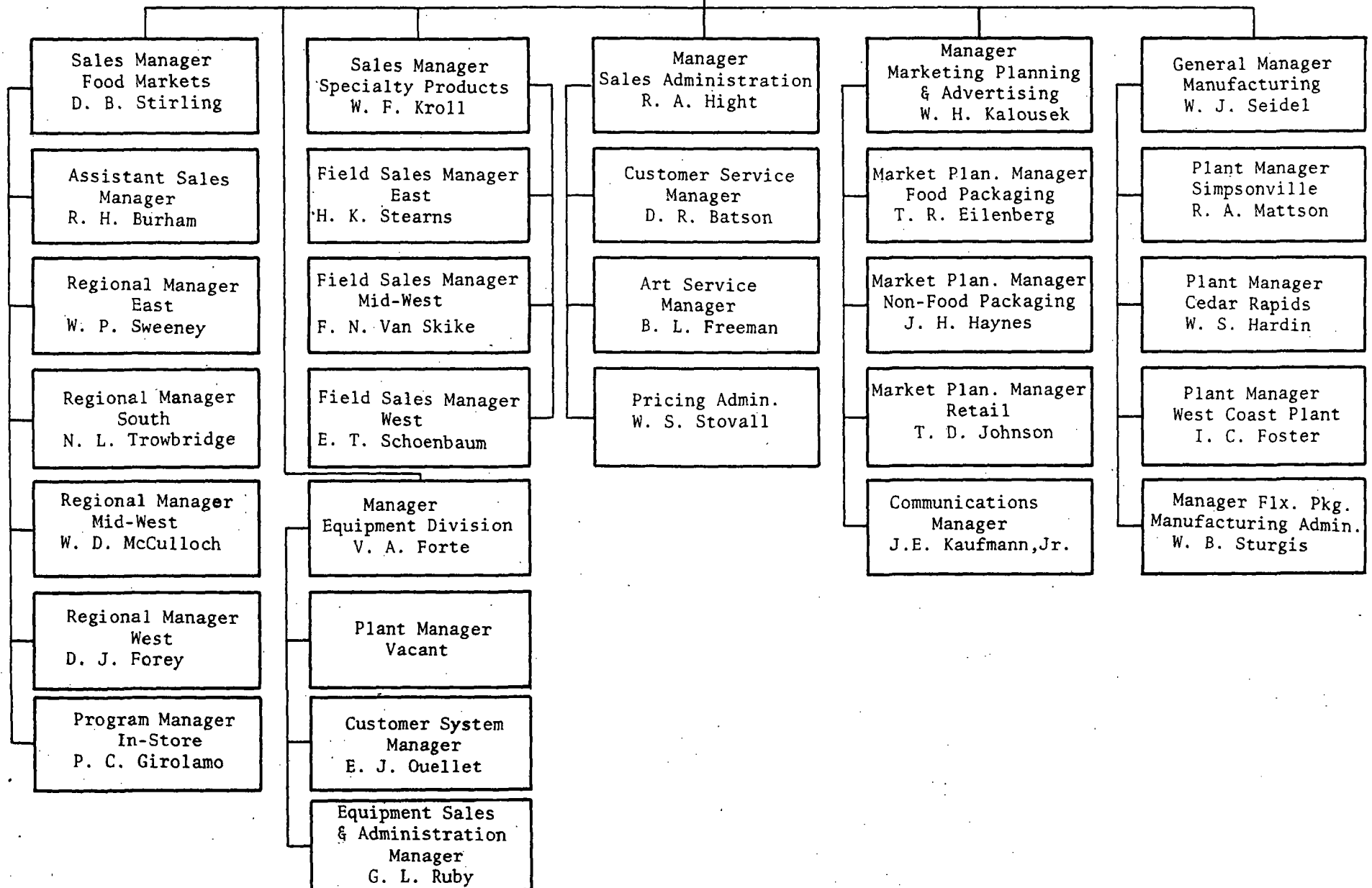
W. R. Grace & Co.  
CRYOVAC Division  
Organization Chart  
March, 1969

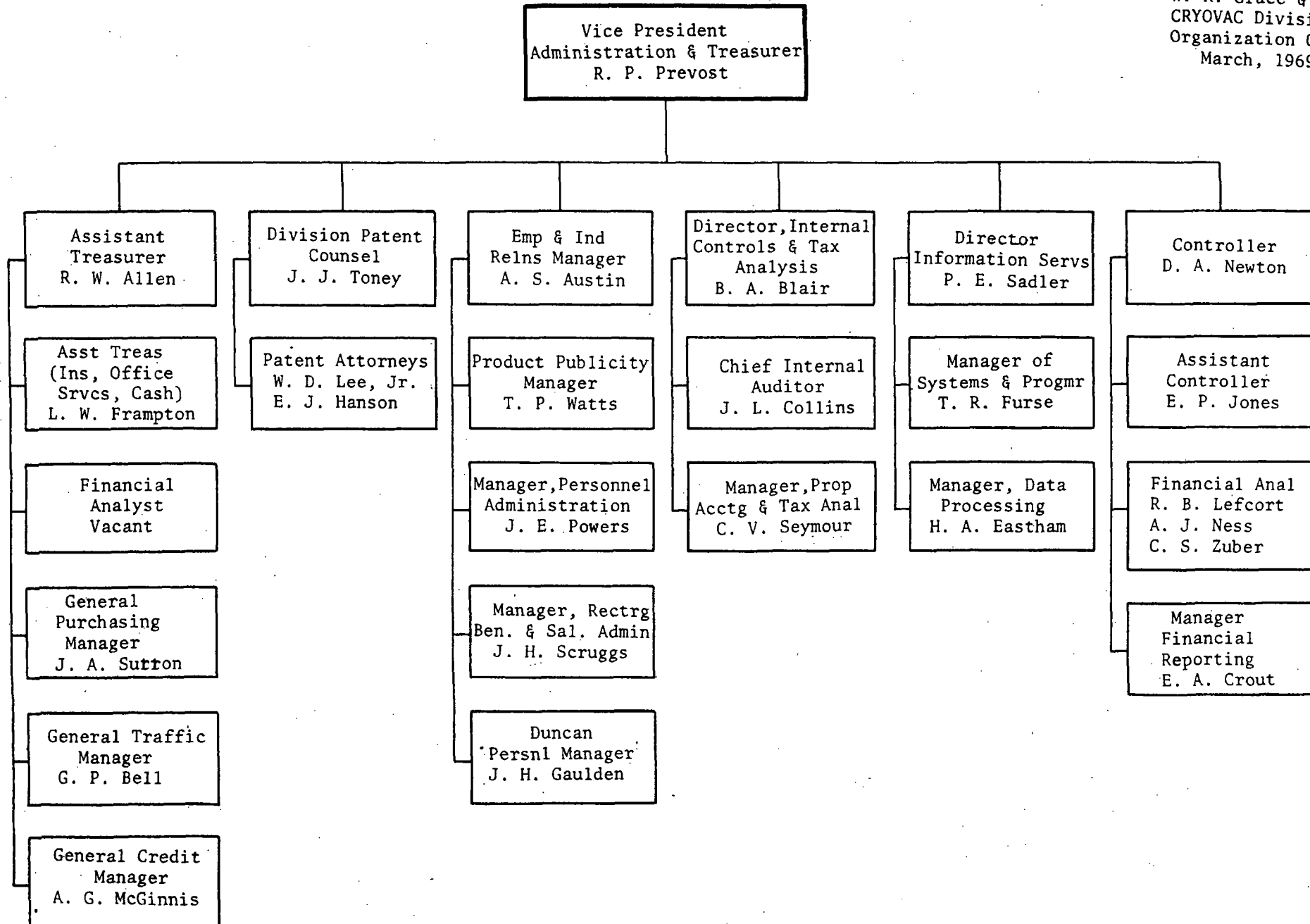
Vice President  
Marketing & Planning  
John Bidwell

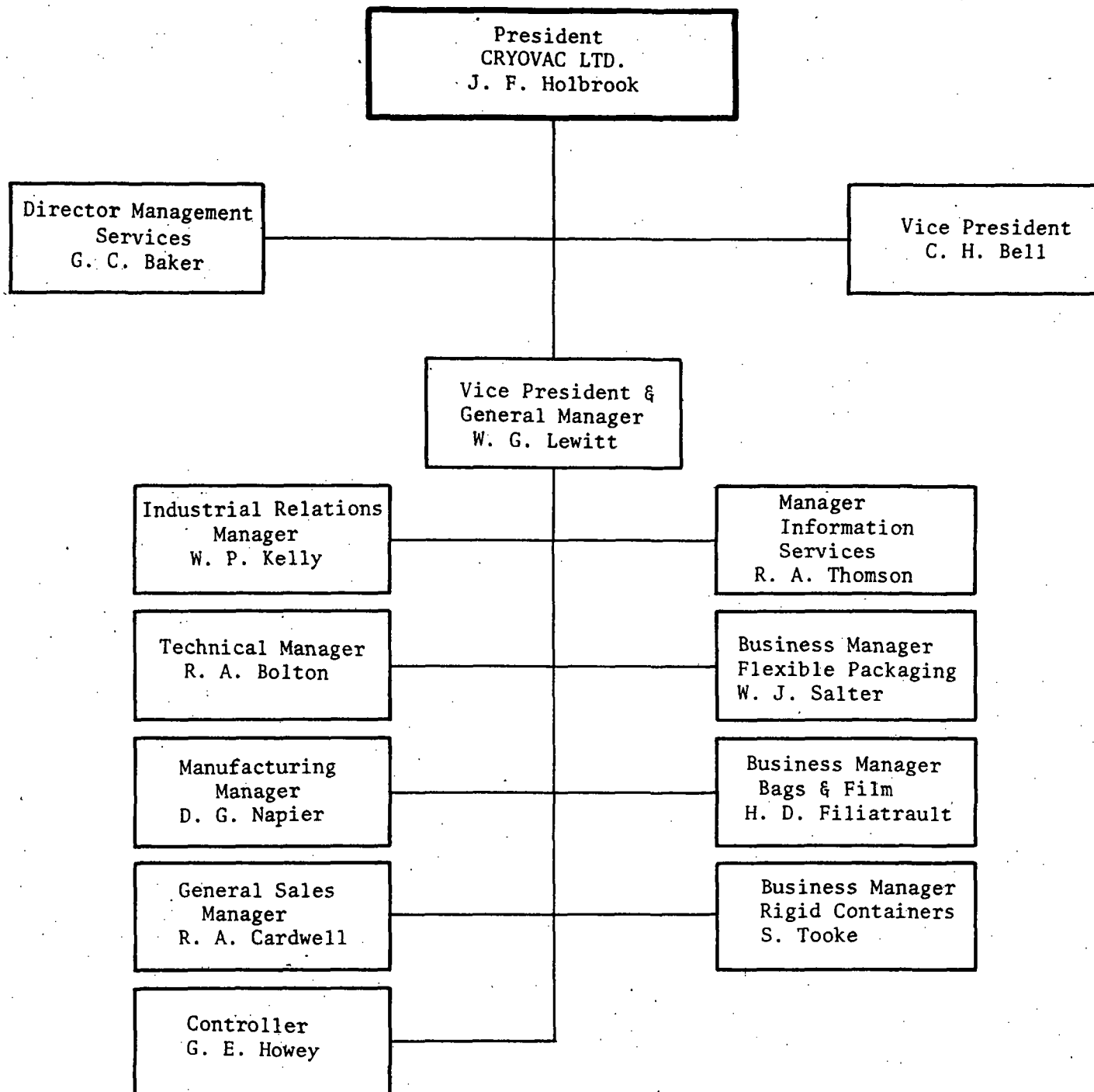
Admin. Assistant  
T. L. Laavy

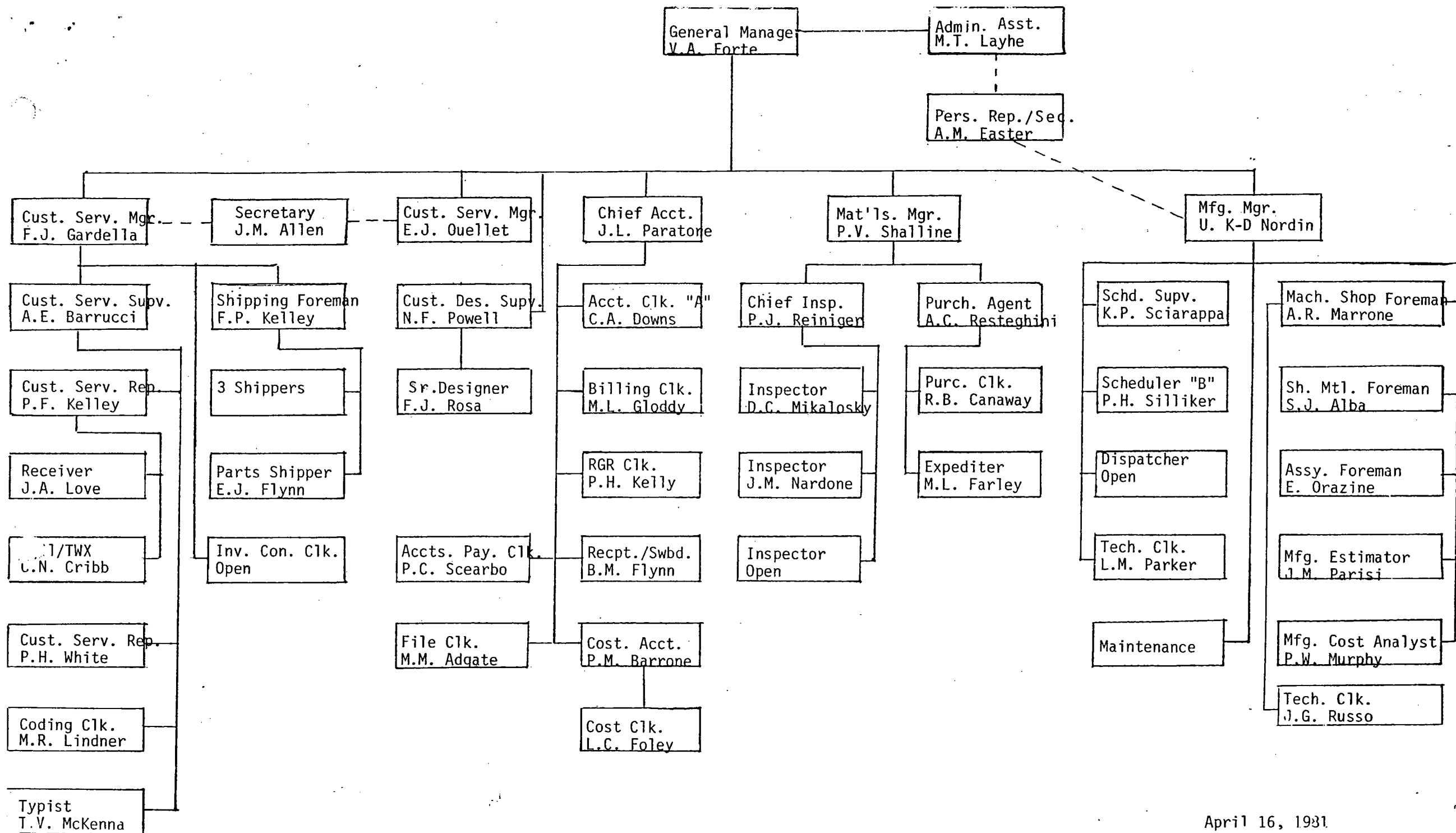


Vice President  
Operations  
R. A. Miller



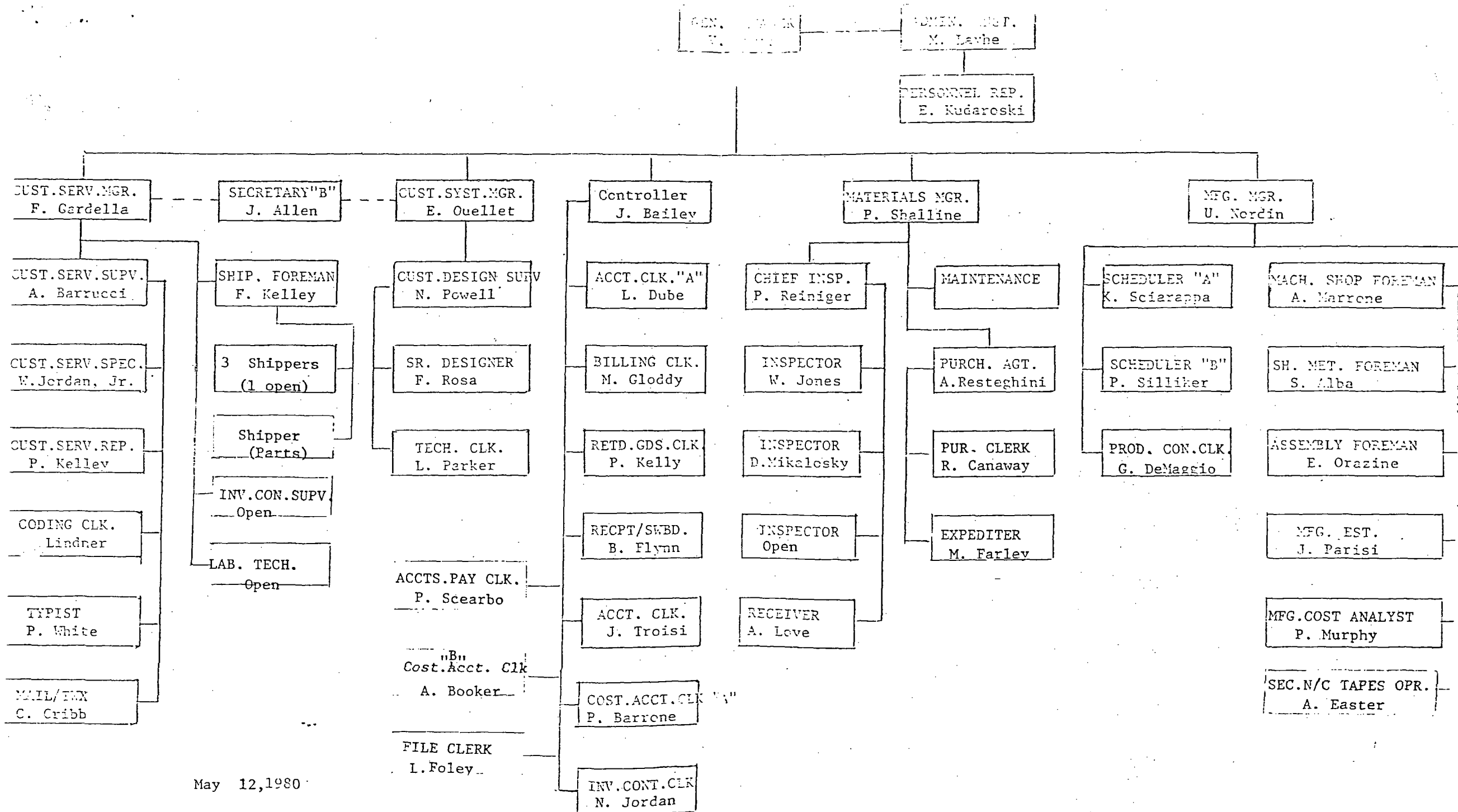


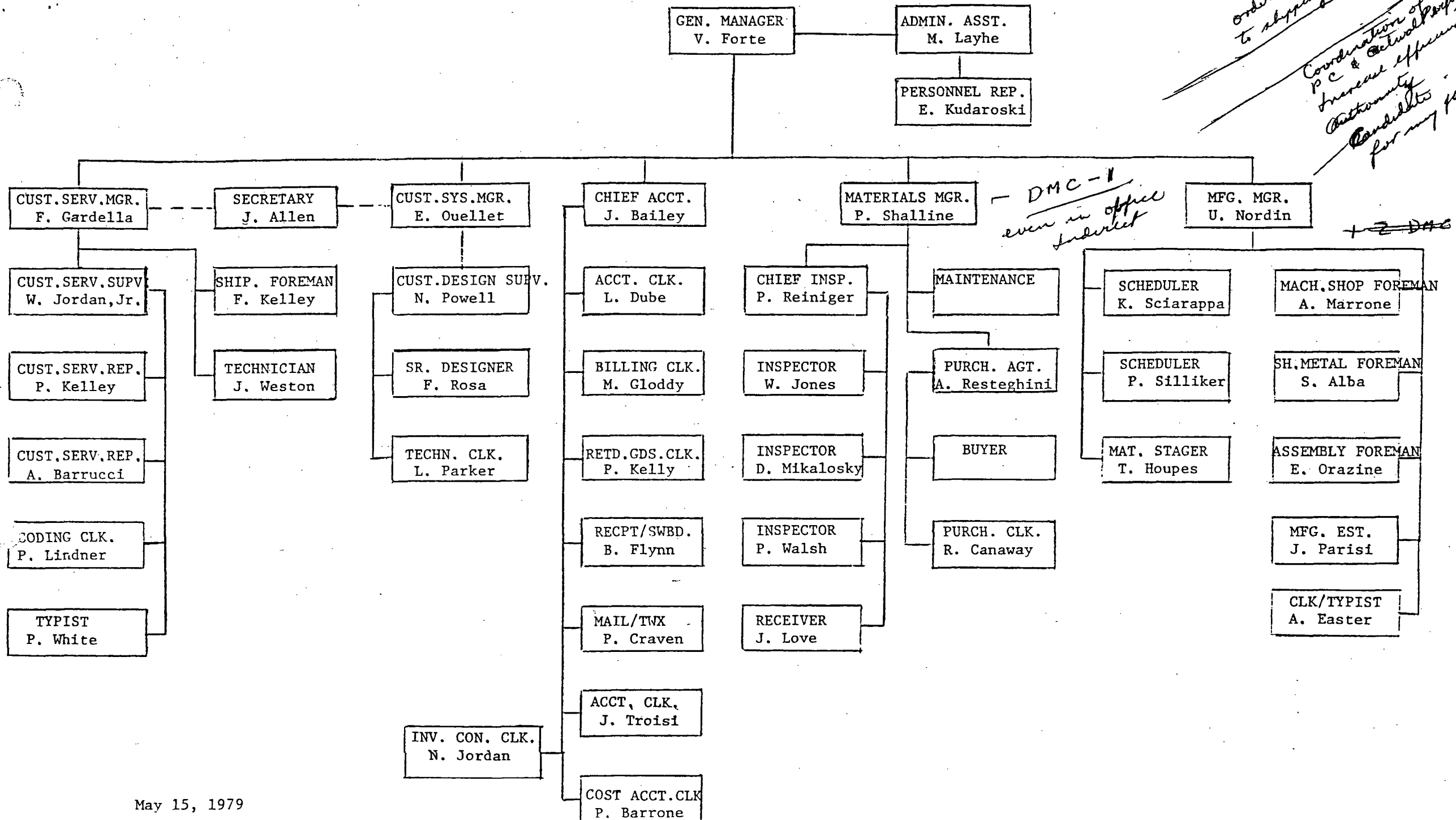




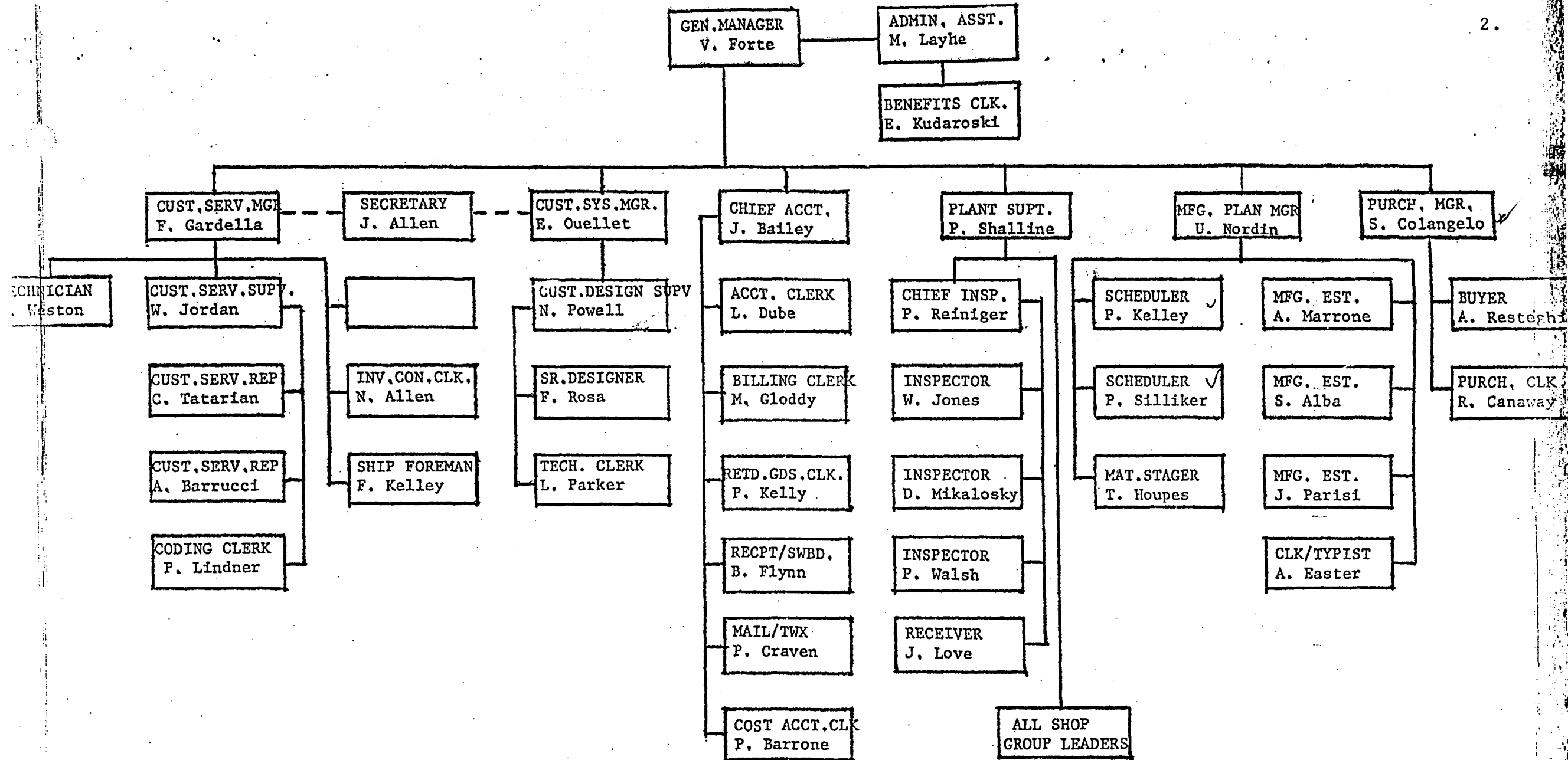
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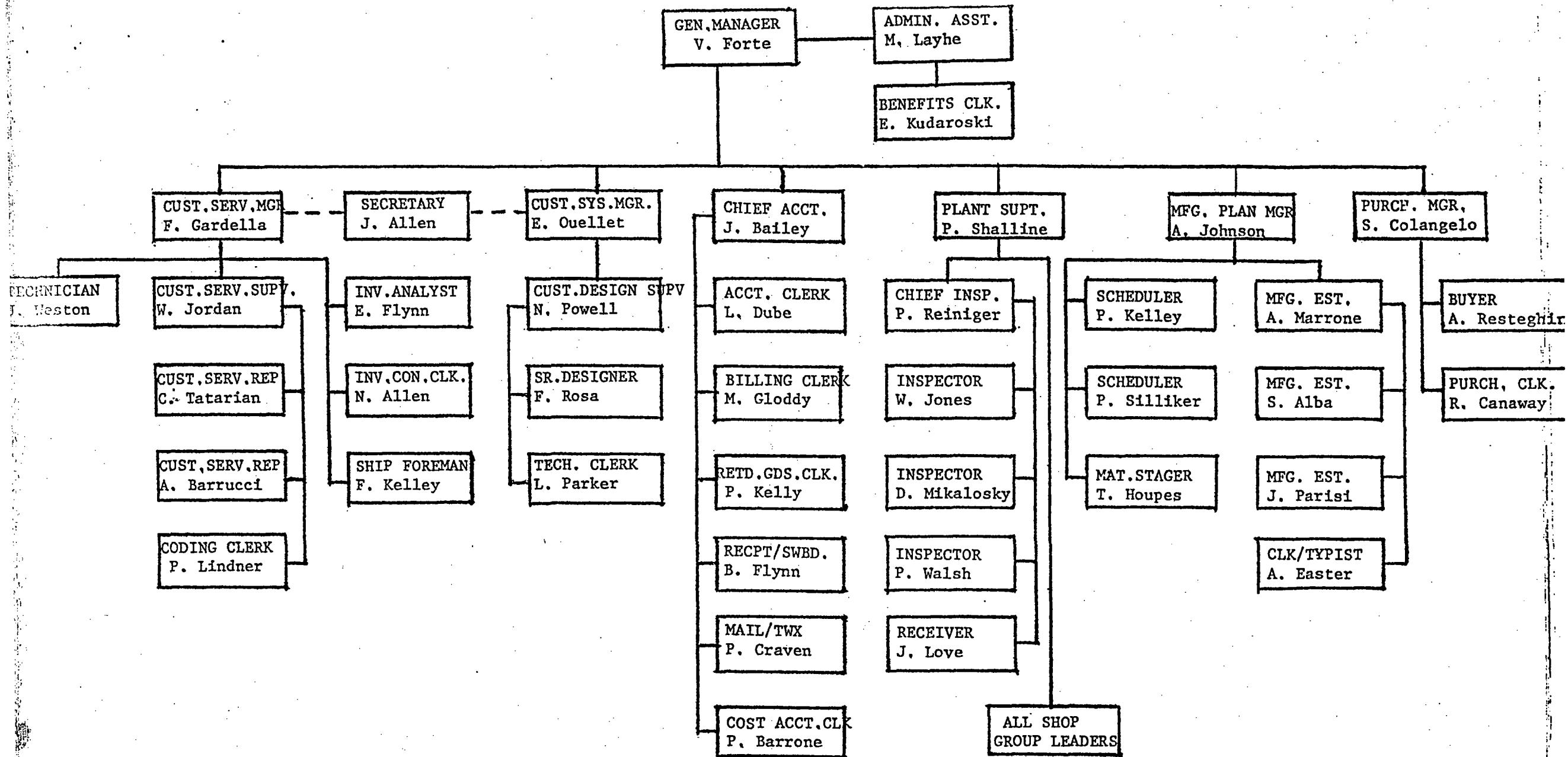




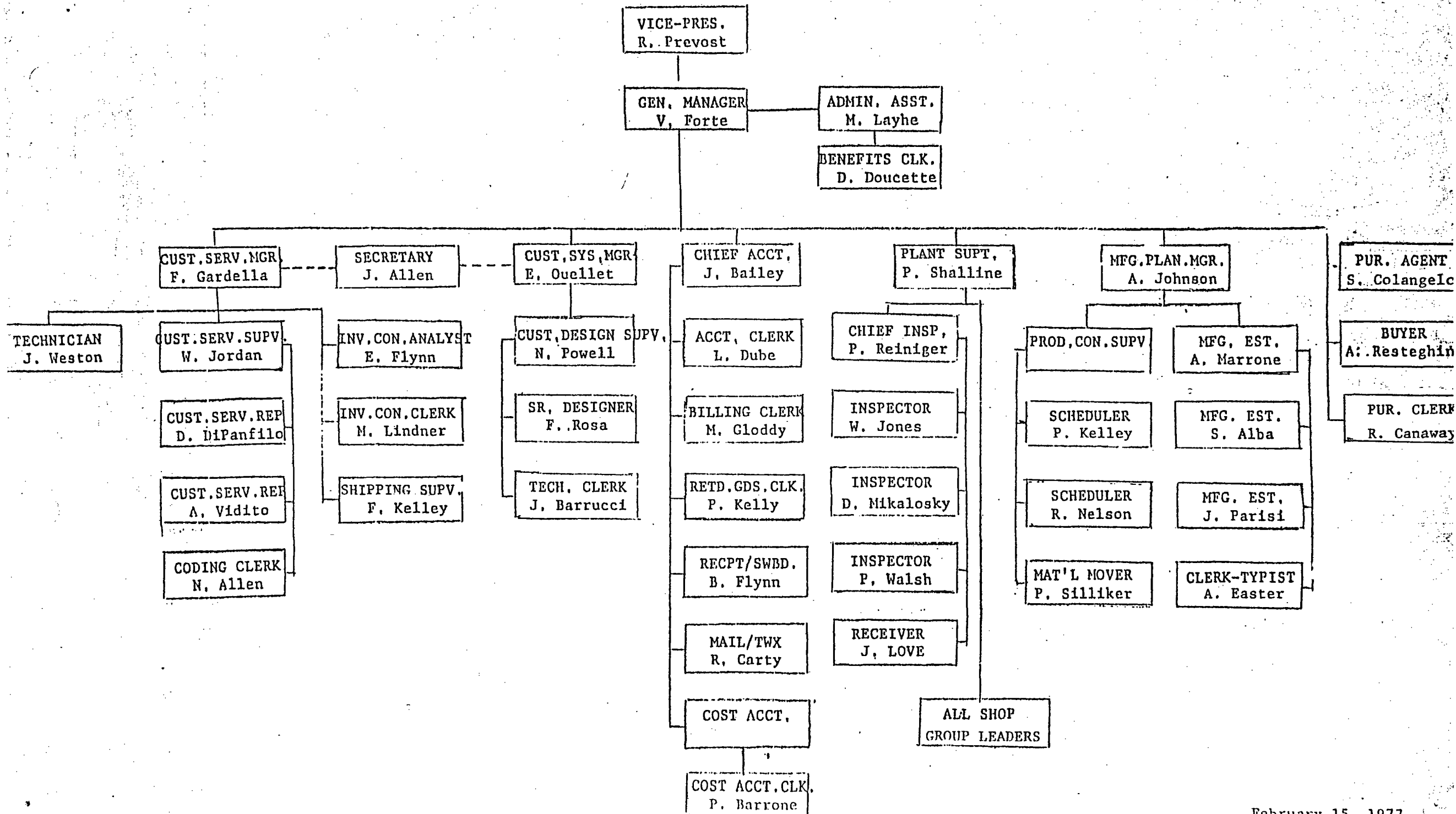
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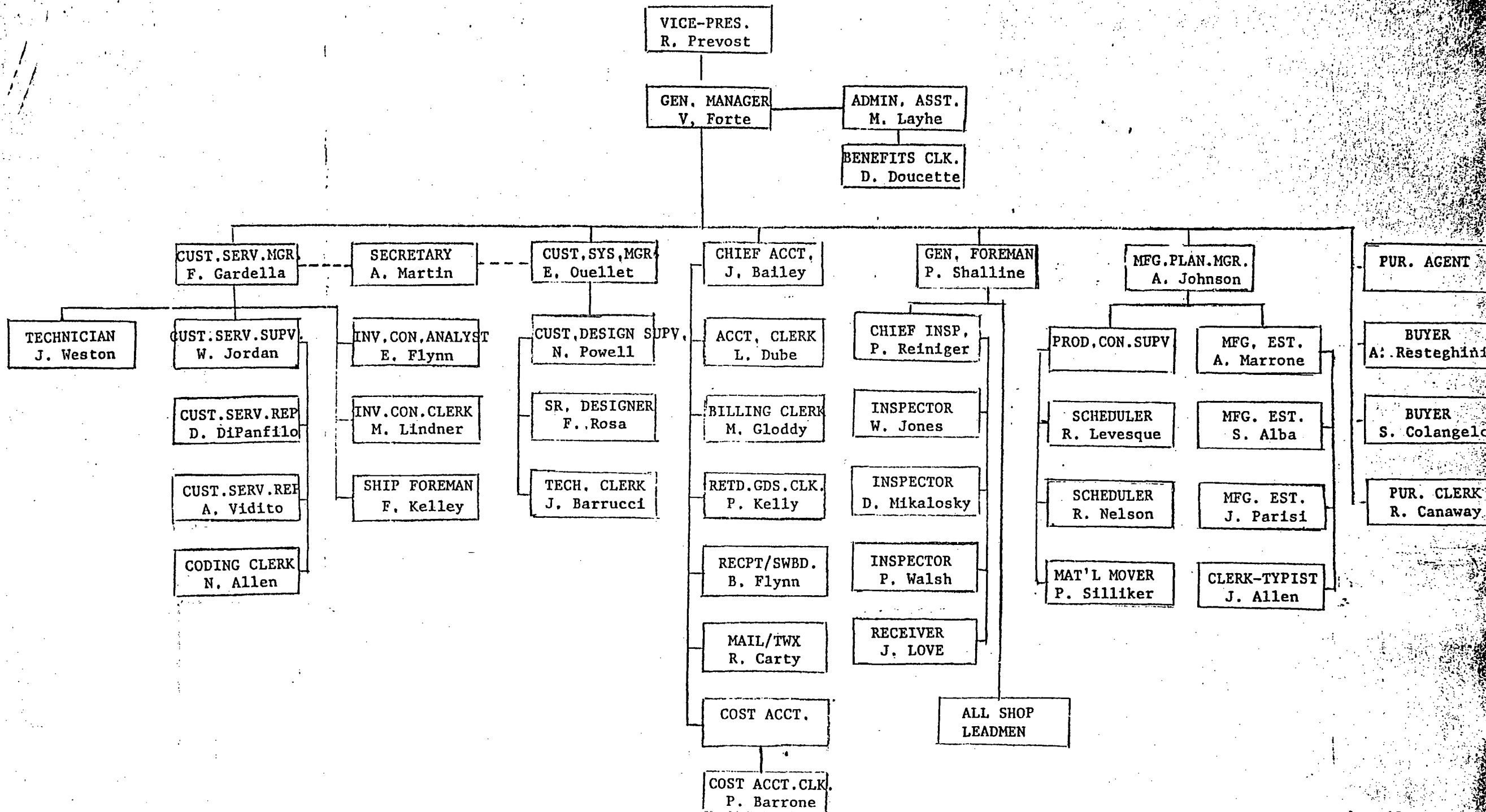


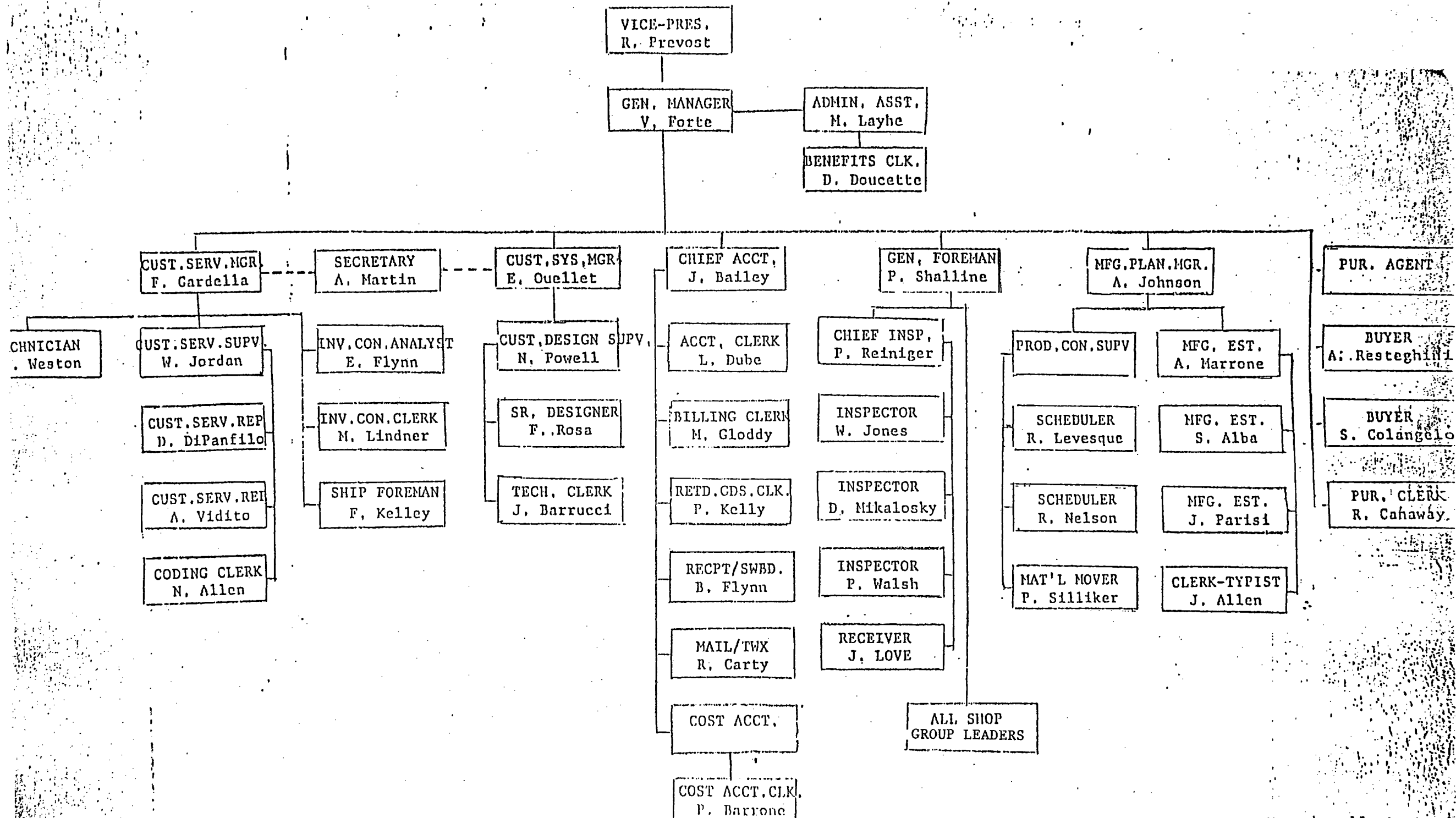
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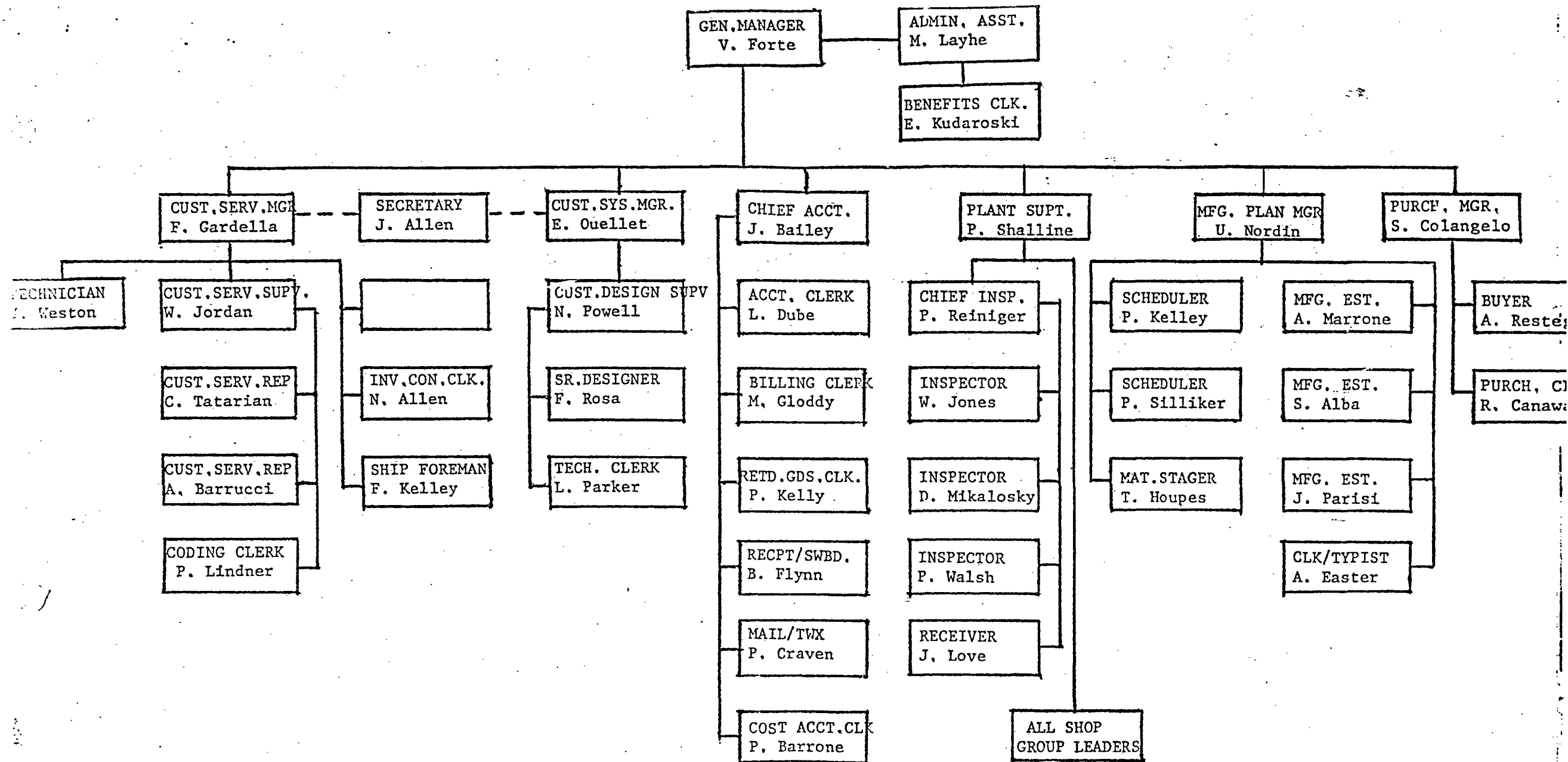


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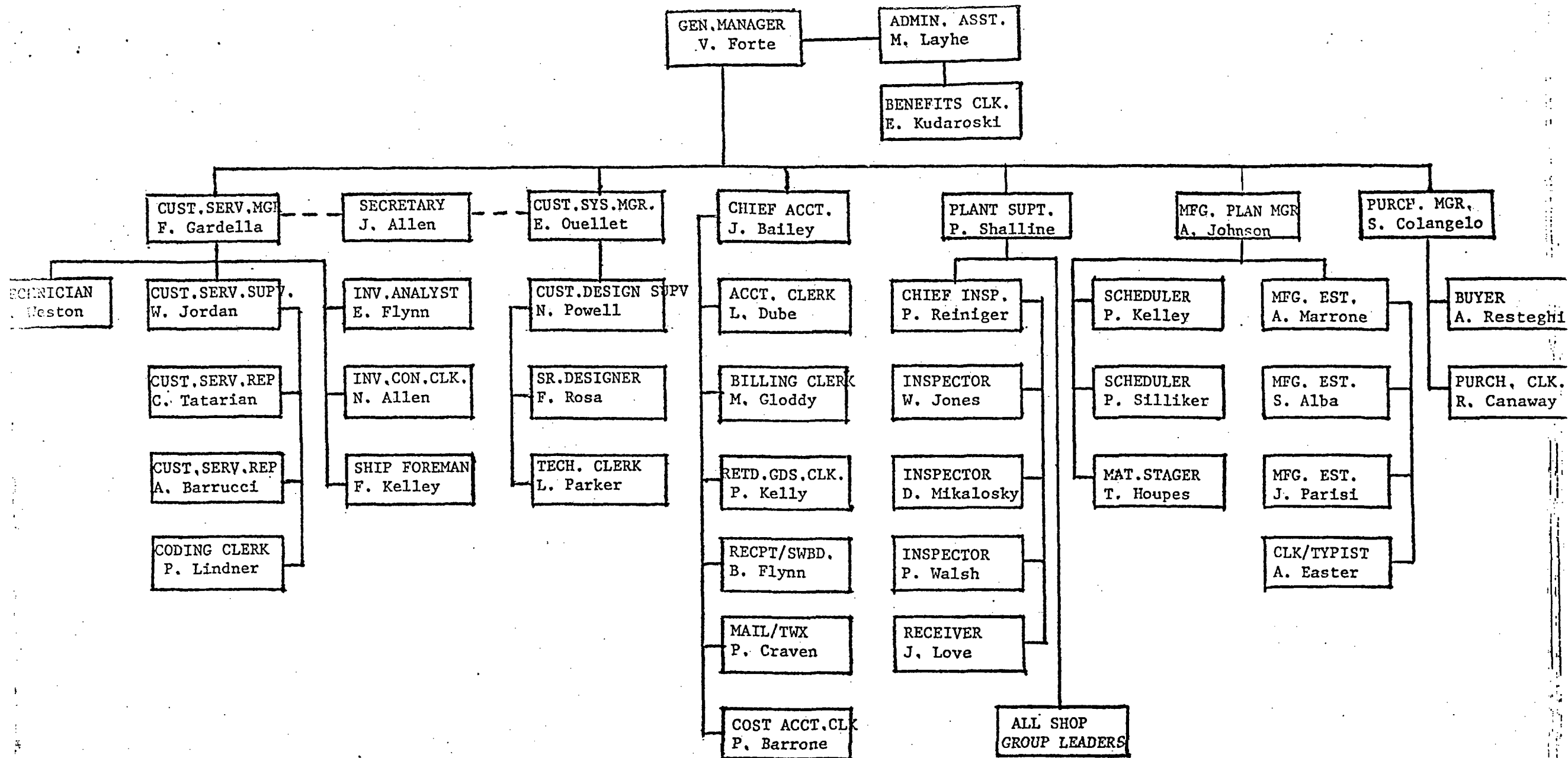




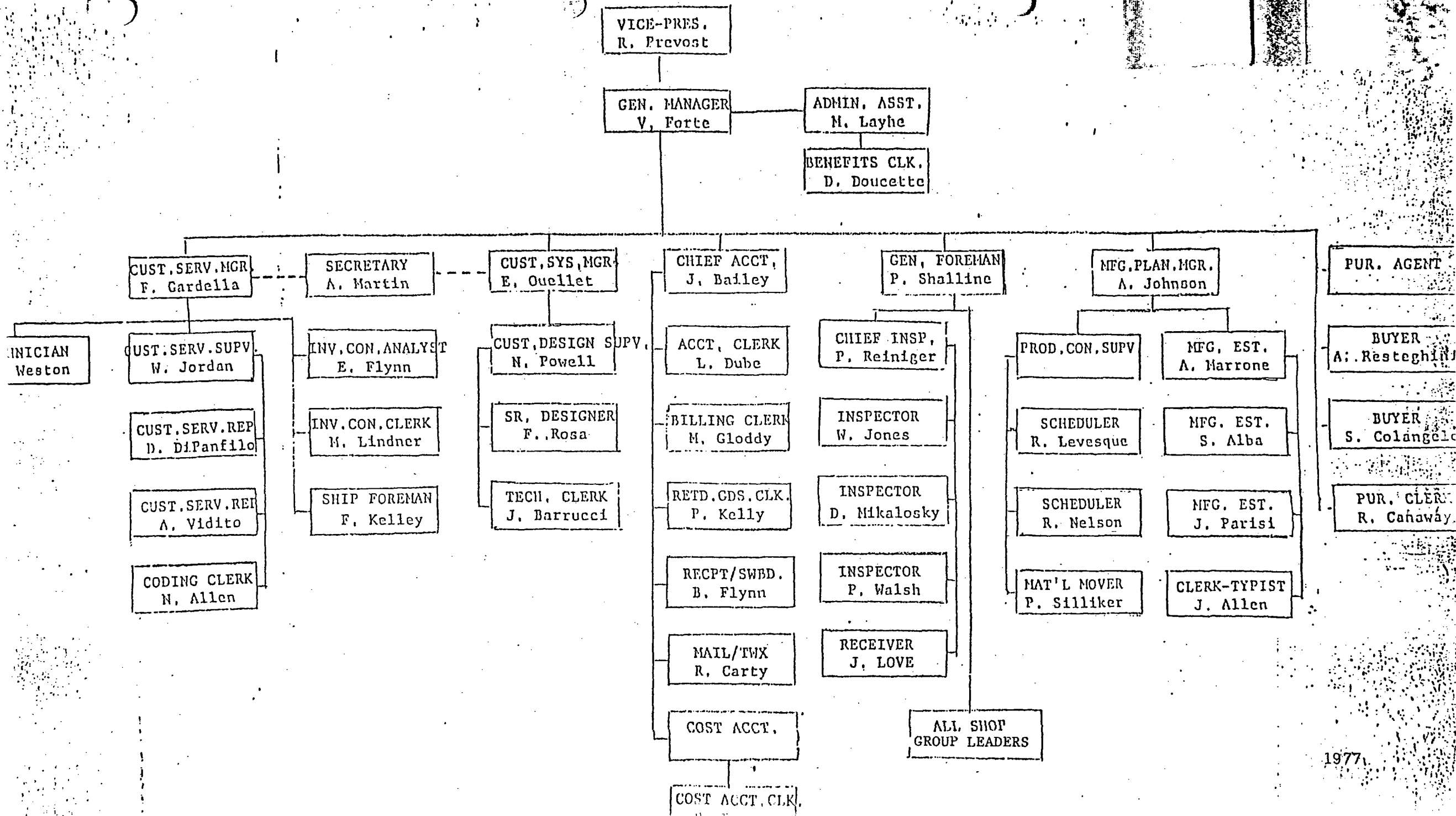


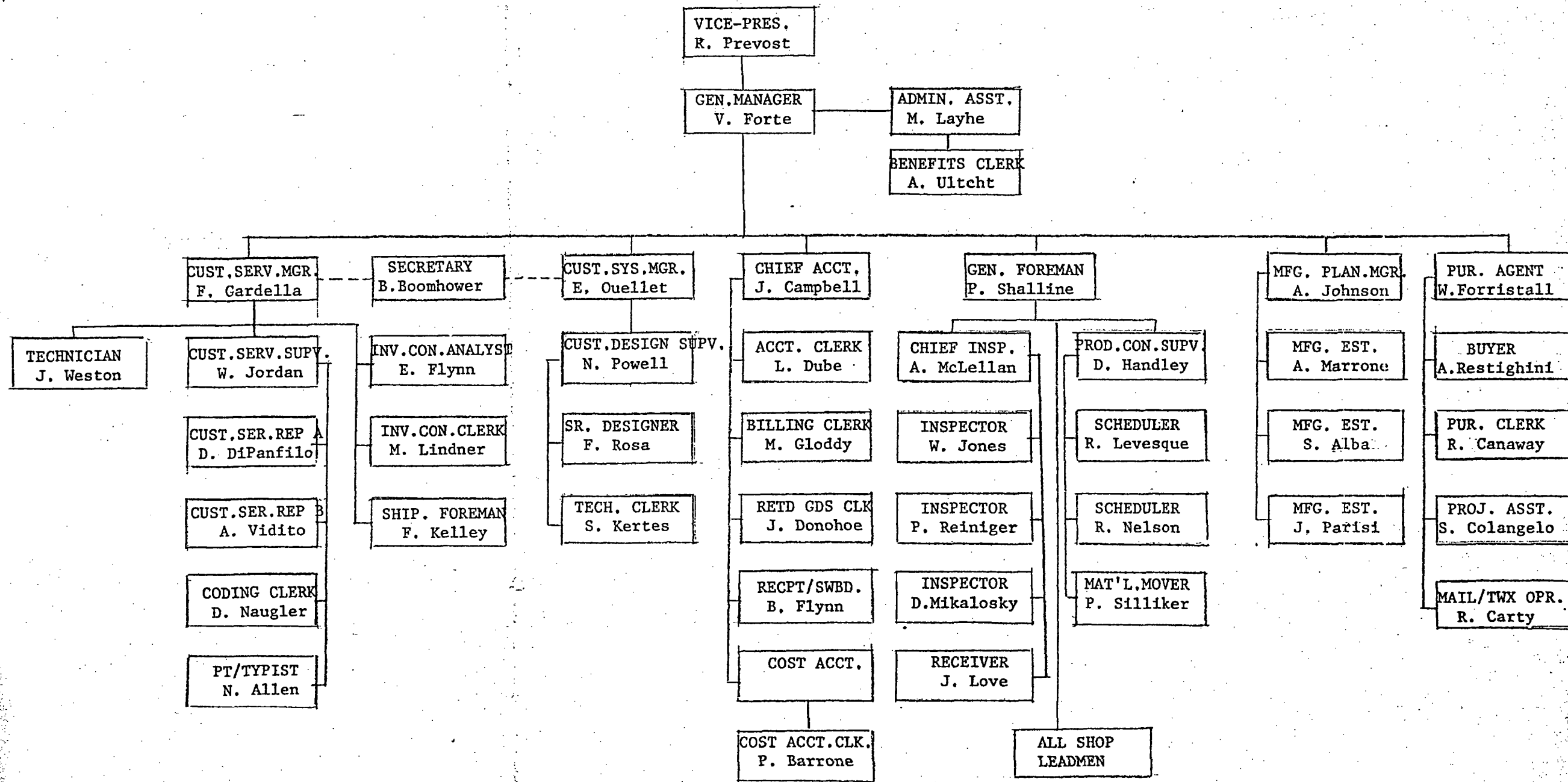
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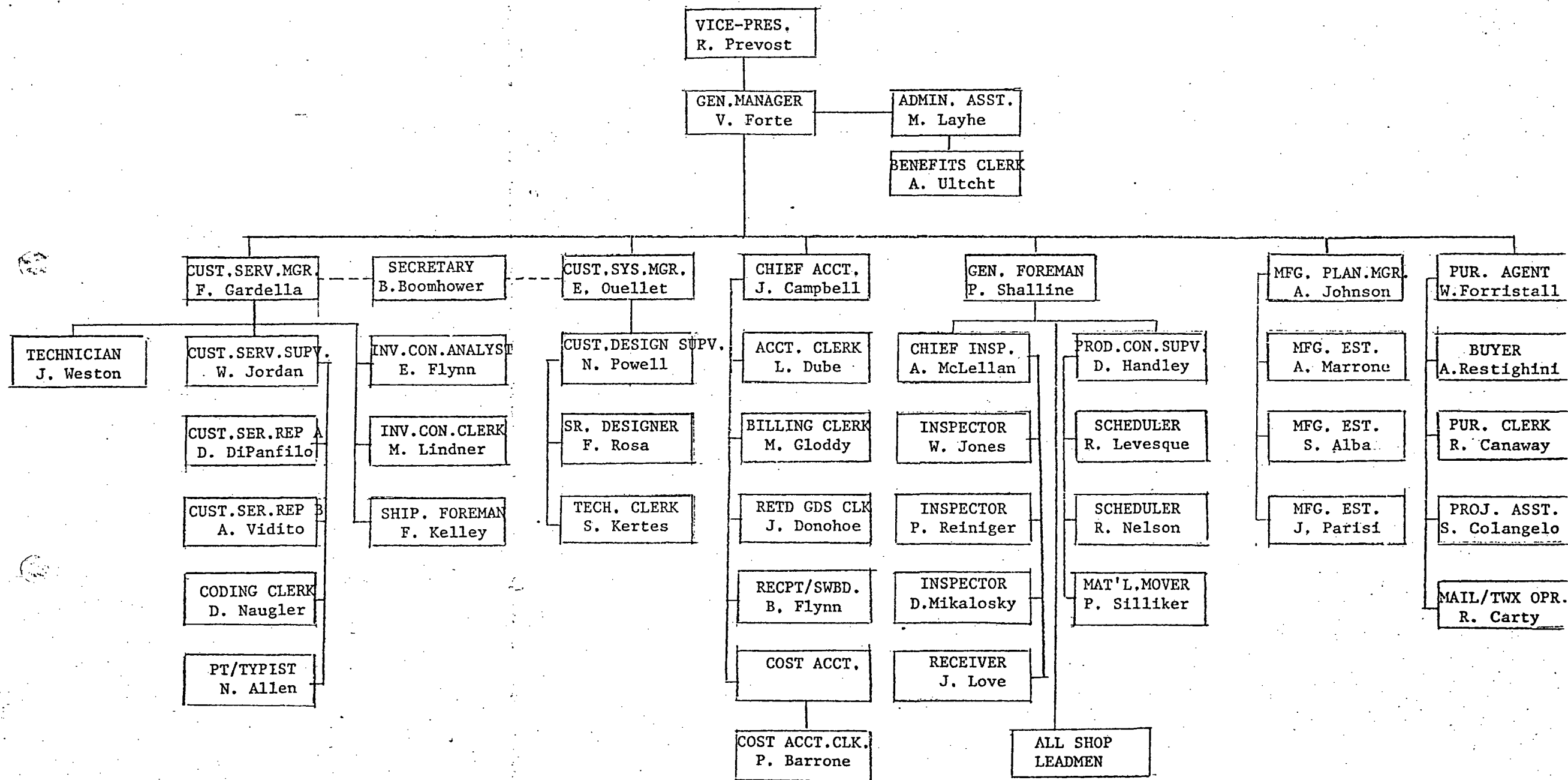


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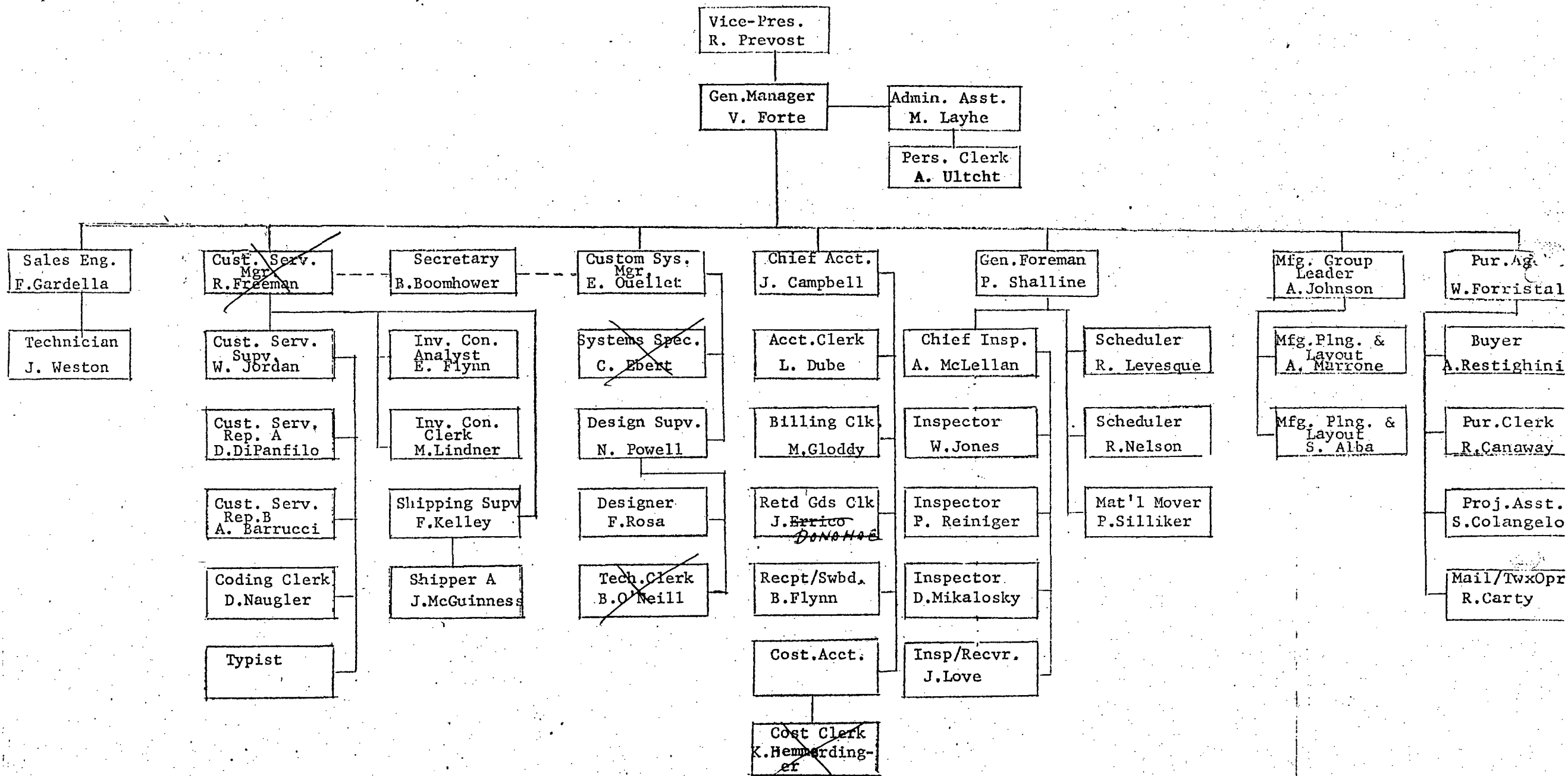


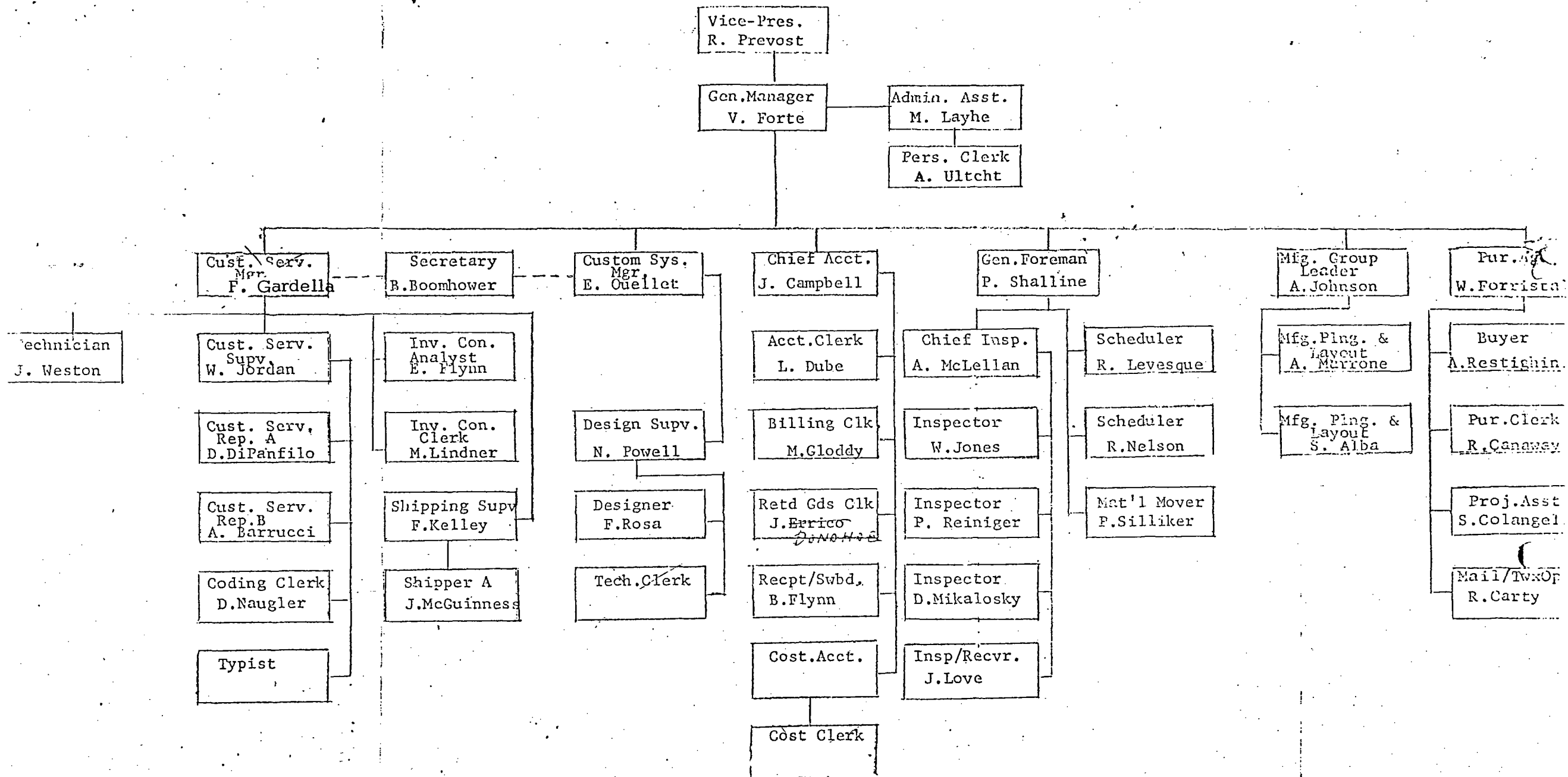


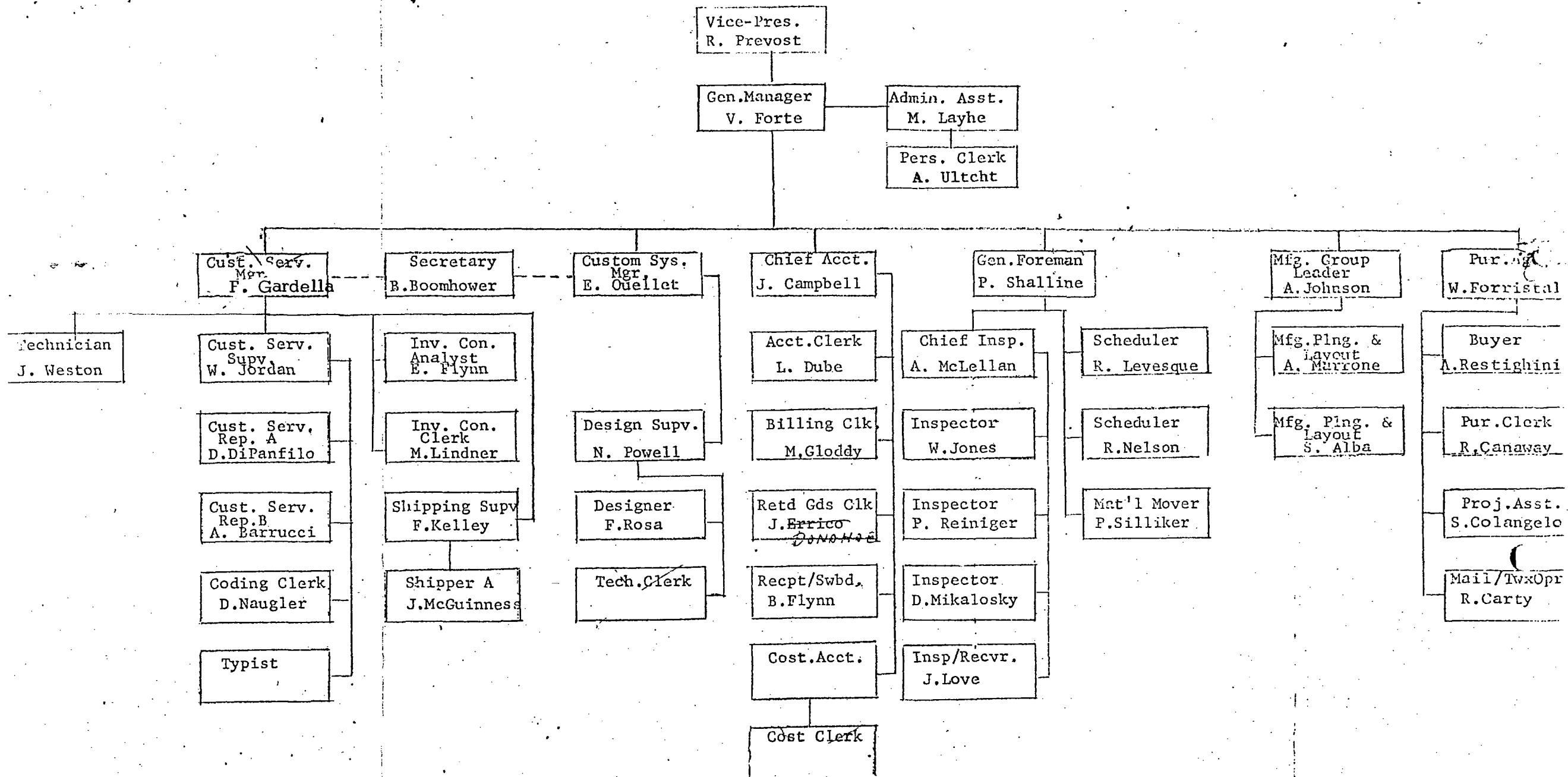
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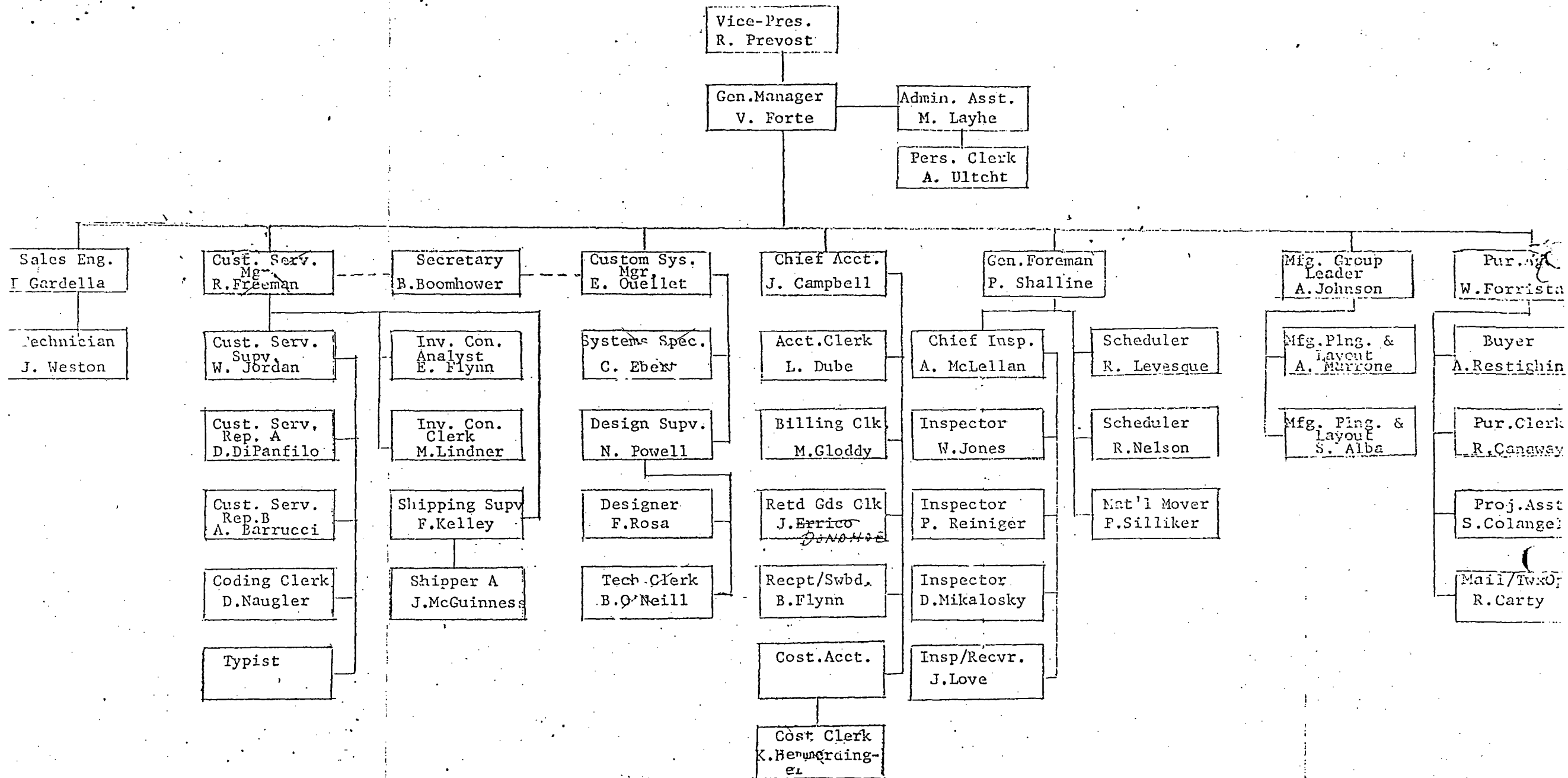


January 1, 1976

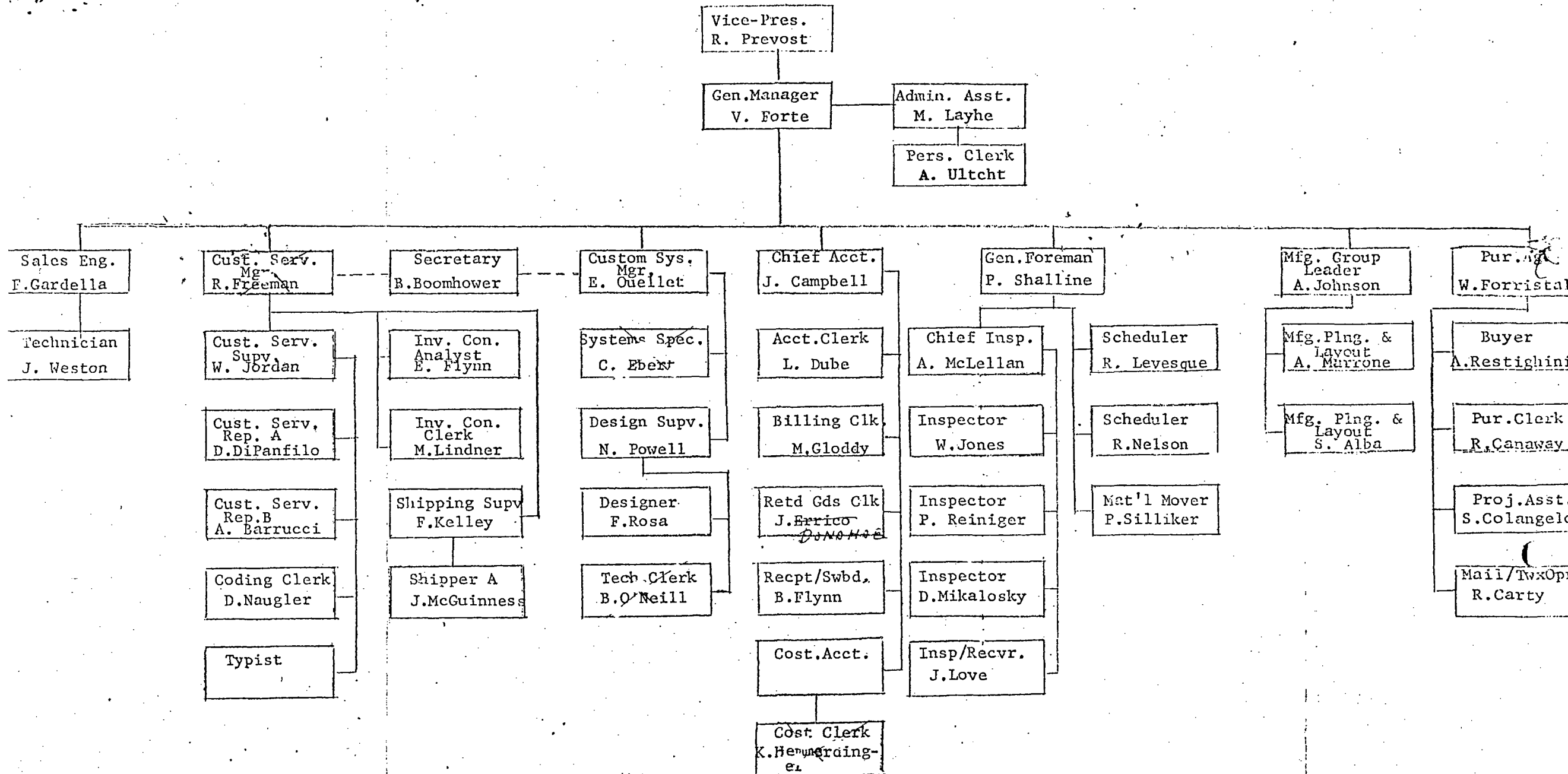












October 15, 1970

## Pollution Control

I want to apologize for the delay in answering your July 17 request for plans concerning pollution control. However, it has taken me this long to accumulate the enclosed envelope of our pollution waste for analysis and determination of proper disposal techniques.

Ten

g

P-15.

3254

QUESTIONNAIRE ON WASTE AND ENVIRONMENTAL PROBLEMS AT EACH CPG PLANT

PLANT LOCATION Woburn

DATE 10/15/70

**I. AMOUNT OF WASTE**

**A. Total Solid Waste**  
(lbs./annum)

45 Tons  
(including reclaim)

15 Tons  
(minus reclaim)

Total All Plastics

- Nylon

- Polyolefins

- Polystyrene

- Polyvinyl Chloride

- Saran

**B. Total All Solvents**  
(lbs./annum)

(assume no reclaim)

Principal Solvents by Technical Name

Solvent

Lbs./Annum

Use, Printing, Etc.

None

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**C. Gaseous Effluents (not solvent vapors)**

1. Ozone (lbs./annum)

2. Flue Gases (if analyzed)  
(lbs./annum)

Natural Gas Used in Boilers

- CO<sub>2</sub>

- CO

- Particulate Matter

- SO<sub>2</sub>

II. DISPOSAL OF SOLID AND SOLVENT WASTE

	At Plant	Municipality (lbs./annum)	Other
Sanitary Land-Fill	—	20 %	—
Incineration	—	—	—
Sewer or Septic Tank	—	—	—
Lagoon or Settling Tank	—	XXXXXXXXXXXX	XXXXXXXXXXXX
Solvents to Atmosphere	—	XXXXXXXXXXXX	XXXXXXXXXXXX

Does municipality treat its sewage, and if so, to what degree?

100 %  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

III. MONITORING OF THE MAJOR POLLUTION DISPERSING MEDIA

Monitored

A. Sewer Effluent

Yes \_\_\_\_\_ No ☒

If yes, what analyses are made, their frequency and average values?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. Stack Gases

Yes \_\_\_\_\_ No ☒

If yes, is monitoring continuous or spot-check and what analyses are made? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. The Atmosphere Near the Plant

Has the atmosphere at specific locations in plant area been sampled and analyzed for components such as ozone, solvent vapors, oxides of nitrogen? If so, copies of typical reports would be appreciated.

*No*

IV. COMPLAINTS, PROBLEMS AND REGULATION INFRINGEMENTS

List any existing or possible future complaints or problems from any source whatsoever (municipal or government authorities, private persons, etc.) on 1) environmental conditions at plant, or 2) waste disposal problems created by plant.

*IT IS BECOMING INCREASINGLY  
DIFFICULT TO DISPOSE OF SCRAP  
WOOD CRATING*

WAP/paf  
3/24/70

Jack E. Powers/Duncan

November 21, 1969

V.A. Forte

P.V. Shalline

Raw Material Manual

Below is listed the information you requested from Vin Forte concerning the usage of hazardous material at Woburn. I have added the cyanides to the list for your evaluation.

**Trichloroethylene:**

Bought a drum at a time and used daily in small quantities to clean and degrease metal parts prior to painting.

**Toluene:**

Bought a drum at a time and used in our paint shop to thin enamels for spraying and the general cleaning of paint lines and guns. Used daily in small quantities.

**Zinc Cyanide:**

Bought in 100 lb. drums in powder form and is used in our zinc plating tank. Small additions are made periodically to control the solution at 8 oz. per gallon.

**Sodium Cyanide:**

Bought in 100 lb. drums in briquet form and is used in our zinc plating tank and a soak tank prior to plating. Small additions are made periodically to control the solution at 6 oz. per gallon.

**Muriatic Acid:**

Used to neutralize any alkaline carry-over from the cleaning tank on the zinc plating line and for stripping zinc plated parts. Additions are infrequent and use is slight. A ratio of about 3:1 is maintained. Material is bought in 30 gallon carboys.

P.V. Shalline

PVS/hfn

	P.O.	Item	Amount
Hand.	13894	20 gal paint, 5gal paint thinner	132.00
Baths & Ordway	14710	20 gal Rust 819	100.00
Stephen Rogers.	14699	1, 55gal drum Trichloroethylene	85.00
Chem - Inc		35gal Reducer.	
Waldron		25gal Hammerstone 25gal Primer	250.00
Dobois Chem.		10gal Enamel	
		8gal Thinner	106.00
	14726	1 - Drum P(500#) Diff Klarifaint	100.00
/	/	/	79.00
5 Tracy.		2 Maple bench tops.	133.00
Austin Hastings		1 Punch & Die	87.00
Austin Hastings		3 Miss Die punch	273.00
Baths & Ordway		600 Miss Gird Carboumdum Met Chalk	
Seab. Welders		150 " " " Belts	200.00
Dubois Chem	12496	12496 purchasing Welding supplies	162.00
Baths & Ordway		3 Barrels "Prepare" 30 Gals / Barrel	305.00
Baths & Ordway		700 Miss Carb. Discs	160.00
Baths & Ordway		400 Rein Cloth Discs	50.00
Baths & Ordway		200 Carbo Rein Discs	62.00
B & O		75 - Carbo wheels.	72.00
" "		150 " Belts	62.00
Austin Hastings		1 Rect Punch	95.00
" "		1 Not all punch	
		3 Punch & Dies	82.00
		2600	1743.00
Peerless Elec.	PG. 22172	Mens Items.	1164.00
" "	14537		1160.00

MEMO		DATE		SHIPPING PT		CARRIER		PREPAID COLL	
Webster Oil Co.		5-16-72		Ma.		T.J.			
P.O. NO.		ACCT. NO.		SUB		DEPT.		PROJECT	
1563		9		7411		00		066	
QUAN		PART NUMBER		DESCRIPTION		COST		ADVICE	
8				GALONS of waste oil + solvents					
				- disposal -					
RECEIVING SIGNATURE		PRE TAPE NO.		VOUCHER NO.					
L. J. Mc									
MEMO NUMBER		FOR ORDER NO.						PRESS FIRMLY	

EXHIBIT  
8-267



Dear Debbie

I believe the following is a complete list of the ACC numbers we have used to date. I have indicated that some of these will not be repeated.

ACC 143A Zinc cyanide plating solution

There will not be any more of this material

ACC 143B Cyanide & water solution

There will not be any more of this material

ACC 143C-J Steam boiler water

This is the same as the ACC 143J recently disposed of.

ACC 143D Dilute phosphoric acid solution

There will not be any more of this material

ACC 143E Paint, mineral spirits, lacquer thinner etc.

This amounts to 150-200 gals yearly

ACC 143H or Magazine boiler water

Disposed of about every 3 years

ACC 143i or Spray booth water

This amounts to about 600 gals per year

ACC 143J Steam boiler water

Same as ACC 143C

ACC 294A Copying Cleaner

This amounts to 1 drum per year Dytex 67

ACC 243 F Paint and thinner sludge  
E This amounts to 2 or 3 drums per year

ACC 243 G Lubricating and hydraulic oil  
This amounts to 4 or 5 drums per year

143 L

143 H

143 E # 1

143 I 2

K 3

243 G 5

143 H 4

143 6

Verbal to Debbie 12/1/81

143 C Steam boiler water

143 E Paint thinner etc

H Heating boiler water

I Spray booth H<sub>2</sub>O

J Same as C

243 F Paint Sludge K

G Hydraulic oil

~~294 A~~  
~~B~~ Copper cleaner

E  
N  
D  
O  
R

*Inter Cross Co.*

*June 1979*

*1-129-6766*

S  
H  
I  
P  
T  
O

*DA*

ROUTING

*TT*

DATE ENTERED

*9-11-79*

DATE WANTED

DATE PROMISED

*9-25*

BUYER

*DA*

☒

ORDER PLACED

☐

PLEASE ORDER

☐

CONFIRMING  
P.O. REQUIRED

QUANTITY

MATERIAL

UNIT  
PRICE

EST.

QUOTE

ACCOUNT

NUMBER

PROJECT

*16 2*  
*2 REC 7/4*  
*4 REC 1/4*

*55 gal overpack drums*  
*with poly liners*

*15.00*

*Analysis of plating solution*  
*submitted*

*35-*

*2*  
*Barrels*

*Cost of disposal of*  
*plating solution ACC 143A*

*128.00*

*Per barrel*

*Analysis of boiler water*  
*and Phosphate sol*

*70-*

*3 Barrels*

*Disposal of boiler water*

*35.00*

*per barrel*

*5 Barrels*

*and phosphoric acid sol*

*76.00*

*" "*

*Boiler water ACC-143C*

*Phosphoric acid ACC 143D*

*1 Barrel*

*Cyanide + water ACC 143B*

*per barrel*

REQUESTED BY

*DA*

APPROVED BY

*DA*

DISTRIBUTION: ACCOUNTING

CRYOVAC

# TECHNICAL REPORT

PAGE \_\_\_\_\_

REPORT DP-159

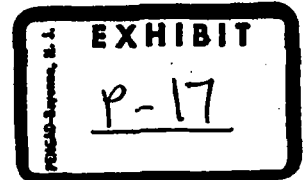
PROJECT NO. 138-3439

FEB 12 71 VAF.

*See Appendix I*

*Beginning Page 27 to 35*

*Fullerton*



THE WASTES OF THE CPL GROUP MANUFACTURING OPERATIONS

RESULTS OF QUESTIONNAIRE

DUNCAN TECHNICAL DEPARTMENT

Distribution

W. G. Baird, Jr.  
R. A. Bolton  
E. L. Chesnutt  
V. A. Forte  
I. C. Foster  
F. W. Greenough  
P. J. Harris  
S. E. Holbrook  
W. M. Kessel  
C. L. Lee  
W. J. Seidel  
R. K. Stewart  
E. J. Szustak  
J. J. Toney  
Stanley Tooke  
R. R. Wilkie  
Technical Library (4)

Route a Single  
Copy to

R. L. Hart  
J. F. Holbrook  
T. L. Lyall  
R. A. Miller  
M. C. Morrill  
R. R. Perdue

J. E. Powers  
T. C. Widder, Jr.  
J. J. Jones (Duncan)

Written By

*W. A. Patterson*  
W. A. Patterson

Director  
Approval

*S. E. Holbrook*  
S. E. Holbrook

Date

*Feb. 1, 1971*

3214

TABLE 1  
SOLID WASTES (LBS./ANNUM)

(Before Reclaim)

Plant	Total Waste	PVC & Saran	Polyolefins	Polystyrene	Nylon	Others	Total Plastics
<b>REDACTED</b>							
Woburn	90,000	-----	-----	-----	-----	-----	-----

<sup>1</sup>Plastics Only

3233

TABLE 2

SOLID WASTES (LBS./ANNUM)

(After Reclaim or Salvage Operations)

Plant	Total Waste	PVC & Saran	Polyolefins	Polystyrene	Nylon	Others	Total Plastics
<b>REDACTED</b>							
Woburn	60,000	-----	-----	-----	-----	-----	-----

<sup>1</sup>Plastics Only

TABLE 3

DISPOSAL OF SOLID AND SOLVENT WASTE LBS./ANNUM

Plants	Sanitary Landfill	Incineratory	Sewer or Septic Tank	Lagoon or Settling Tank	Solvents to Atmosphere	Municipal Sewage Treatment <sup>(5)</sup>
--------	-------------------	--------------	----------------------	-------------------------	------------------------	---

REDACTED

Woburn	60,000	-----	-----	-----	---	None
	Municipal					

- (1) Some Pentane loss to air within building.
- (2) 25,000 pounds of solvent waste by private contractor - final destination not designated.
- (3) Office waste paper.
- (4) 30,000 pounds of liquid solvent waste, final distination unknown.
- (5) Included - useful in questions of liquid waste disposal.

WAP:lsn 1/22/71

3230

TABLE 4

TOTAL CONSUMPTION OF SOLVENTS BY PLANTS  
Based on Table 6, Except for Foam Plants

Pounds

No. of Solvents

**REDACTED**

Woburn

0

0

- (1) One is a blend - could be reduced to nine different solvents.
- (2) One is used for extrusion.
- (3) Pentane Only.

WAP/jg

1/22/71



TABLE 7  
GASEOUS EFFLUENTS (NOT SOLVENTS)  
LBS./ANNUM

N.D. - Not Determined

<u>Plant</u>	<u>Ozone</u>	<u>Particulate Matter</u>	<u>Carbon Dioxide</u>	<u>Carbon Monoxide</u>	<u>Sulfur Dioxide</u>	<u>Other</u>
--------------	--------------	---------------------------	-----------------------	------------------------	-----------------------	--------------

REDACTED

Woburn(3)	None	N.D.	N.D.	N.D.	N.D.	N.D.(3)
-----------	------	------	------	------	------	---------

- (1) Negligible amounts from static eliminators if used.
- (2) Ozone from irradiation.
- (3) Natural gas used in boiler.

WAP/jg  
1/22/71

3231

TABLE 8  
MONITORING OR CHECKING

<u>Plant</u>	<u>Sewer Effluent</u>	<u>Stack Gases</u>	<u>Solvent Emission</u>	<u>Environmental Checks (Outside)</u>
--------------	-----------------------	--------------------	-------------------------	---------------------------------------

**REDACTED**

Woburn	No	No	No	None
--------	----	----	----	------

(1) Not done on a routine basis - check for combustion rather than environmental contamination.

WAP/jg

1/22/71

3240

TABLE 9

CURRENT COSTS OF WASTE DISPOSAL

**REDACTED**

Woburn

\$ 1,200

**REDACTED**

REPORT DP-159

PROJECT NO. 138-3439

APPENDIX II**REDACTED**WOBURN

It is becoming increasingly difficult to dispose of scrap wood crating.

3250